GOVERNMENT OF KERALA
KERALA STATE PLANNING BOARD

FOURTEENTH FIVE-YEAR PLAN
(2022-2027)

WORKING GROUP ON

Harvesting the Power of Decentralisation in Agricultural Growth

REPORT

Decentralised Planning Division
March 2022

FOREWORD

Kerala is the only State in India to formulate and implement Five-Year Plans. The Government of Kerala believes that the planning process is important for promoting economic growth and ensuring social justice in the State. A significant feature of the process of formulation of Plans in the State is its participatory and inclusive nature.

In September 2021, the State Planning Board initiated a programme of consultation and discussion for the formulation of the 14th Five-Year Plan. The State Planning Board constituted 44 Working Groups, with more than 1200 members in order to gain expert opinion on a range of socio-economic issues pertinent to this Plan. The members of the Working Groups represented a wide spectrum of society and include scholars, administrators, social and political activists and other experts. Members of the Working Groups contributed their specialized knowledge in different sectors, best practices in the field, issues of concern, and future strategies required in these sectors. The Report of each Working Group reflects the collective views of the members of the Group and the content of each Report will contribute to the formulation of the 14th Five-Year Plan. Each Report has been finalised after several rounds of discussions and consultations held between September and December 2021.

This document is the Report of the Working Group on "Harvesting the Power of Decentralisation in Agricultural Growth". The Co-Chairpersons of Working Group were Sri.Omallur Sankaran and Smt.Sarada Muraleedharan IAS. Dr.Jiju.P.Alex, Member of the State Planning Board co-ordinated the activities of the Working Group. Smt.Josephine.J, Decentralised Planning Division was the Convener of the Working Group and Dr.Sreekumar.T.L, Assistant Director, Decentralised Planning Division was Co-Convener. The terms of reference of the Working Group and its members are in Appendix I of the Report.

Member Secretary

PREFACE

The State Planning Board constituted a Working Group on Harvesting the Power of Decentralisation in Agricultural Growth in connection with the formulation of XIV Five Year Plan (2022-27). Smt.Sarada Muraleedharan IAS and Sri.Omallur Sankaran were the Co-Chairpersons of the Working Group.

The Working Group held several meetings in State Planning Board for drawing up broad perspectives for decentralisation and agricultural growth. Besides, sub themes were formed for reviewing the development initiatives and preparing notes on sectoral issues under decentralisation and agricultural growth. Details are given below:

1. To critically assess the role and performance of LSGIs in promoting productive sector investments and agricultural growth - quantitative and qualitative - over the past five years.
2. To suggest reform measures to be undertaken to rejuvenate the participation of LSGIs in promoting public expenditure and agricultural growth.
3. To suggest legal or administrative changes to be initiated, if any, to deepen the participation of LSGIs in agricultural development.
4. To prepare an implementable roadmap to converge the objectives and foci of the state plan schemes and schemes prepared by the LSGIs towards agricultural development.
5. To suggest measures to improve the design, formulation, and implementation of schemes towards agricultural development at the LSGI-level

The Working Group examined the suggestions and views expressed by the members while the final report is drawn up.

We hope that this report would enable to formulate comprehensively the XIV Five Year Plan proposals and implement the schemes more effectively by the local governments.

Smt.Sarada Muraleedharan IAS
(Co-Chairperson)

Sri.Omallur Sankaran
(Co-Chairperson)

CONTENTS

LIST OF TABLES

EXECUTIVE SUMMARY

The State Planning Board constituted a Working Group on Harvesting the Power of Decentralisation in Agricultural Growth in connection with the formulation of XIV Five Year Plan (2022-27). Smt.Sarada Muraleedharan IAS and Sri.Omallur Sankaran were the Co-Chairpersons of the Working Group. The major aim of this working group was to analyse the current interventions in agricultural sector by LSGs and recommend the needed modifications. The terms of reference were to critically assess the role and performance of LSGIs in promoting productive sector investments and agricultural growth - quantitative and qualitative - over the past five years, to suggest reform measures to be undertaken to rejuvenate the participation of LSGIs in promoting public expenditure and agricultural growth, to suggest legal or administrative changes to be initiated, if any, to deepen the participation of LSGIs in agricultural development, to prepare an implementable roadmap to converge the objectives and foci of the state plan schemes and schemes prepared by the LSGIs towards agricultural development and to suggest measures to improve the design, formulation, and implementation of schemes towards agricultural development at the LSGI-level.

Kerala's agricultural sector is unique marked by a set of features that sets it apart from other Indian States. Substantial increase in the share of non-agricultural area in the total geographical area of the state, fall in the share of net sown area, large inflow of remittances, sharp growth of the services sector, high opportunity cost of land, a shift towards non-food-grain crops and high value horticultural crops are a few major features. Consequent to the enactment and implementation of Panchayati raj Act, the state agriculture department has been transferred to the panchayt, along with major departments. Agricultural development of a state constrained heavily by the land area has to be viewed comprehensively focusing on integration both vertical and horizontal.

The people's plan campaign and the multi-stage methodology it evolved over the last 25 years, of course, have changed local development planning from a techno-bureaucratic task to a people's project. The major changes introduced in the guidelines for formulation and implementation of the Local Government Plans during the 13th five Year Plan aimed at simplifying the procedures to avoid delays. Still, it is observed that the multiplicity of government orders and other factors like compulsory allocations, amounts to diluting the concept of decentralisation. The IVth Plan document has been mandated with the objective of revitalising the system of decentralised democratic governance, through timely preparation of plans by local governments, the integration of plan and budget, timely implementation and better utilisation of funds, formation of District Resource Centres and efficient disaster preparedness in the wake of natural disasters.

The planning for developing schemes and programmes for agriculture in the state needs a revamping in the light of the major changes in the land use and cropping pattern in the state, at the same time ensuring food security and ecological sustainability. Food crops comprising rice, tapioca, sweet potato, millets, and pulses accounted for 9.88 per cent of the total cropped area in 2019-20 while cash crops (cashew, rubber, pepper, coconut, cardamom,

tea and coffee) constituted 61.6 per cent. Apart from the department of Agricultural Development and Farmers' welfare, the nodal agency for implementing schemes and programmes for agricultural development in Kerala, other public sector entities like Vegetable and Fruit Promotion Council Keralam, State Horticulture Mission, Commodity Boards, cooperative marketing federations etc. Most of the schemes implemented are crop centric and production oriented, with less focus on sustained marketing strategy to combat price volatility. The noval schemes like Punarjani- for Restoration of Agricultural Sector in Post Flood Scenario, and the crop insurance scheme aimed at risk mitigation of farmers. The Supply Co coordinated paddy procurement is one of the successful market intervention schemes in the state. The base price scheme for fruits and vegetables announced by the government as market support during the Covid 19 lock down, even though the first of its kind in India, faces challenges, still unresolved.

A perusal of the schemes and projects being implemented through the state department of agriculture and the local government bodies testimonies that majority of the programmes in the agricultural sector is concentrated on supply of planting materials, organic manure, fertilisers, urea, small scale machinery, subsidy for paddy as well as vegetable cultivation, etc. Projects for building basic infrastructure in agriculture sector like irrigation, ware houses are found to be scanty, as also projects to develop market infrastructure. The present guidelines for project formulation limits taking up projects related to containment of pest infestation, medicinal plants, mixed farming, and integrating credit component from PACS need revision for encouraging cultivation of tree crops which in turn would lead to conservation of environment as a whole have not materialised.

A quantitative appraisal of the nature and magnitude of investment in agriculture by 1200 plus LSGIs for the last five years may be consolidated. A five-year agriculture development plans for LSGIs with a comprehensive outline for using human and financial resources (state and central schemes etc.) and the PACS may be developed. The District Development Reports available with District Panchayaths, as well as the Panchayat Vikasana rekha can be revisited and reinvented, and the future projects need to be formulated based on this.

LSGIs should give thrust increase productivity of crops in Agro Ecological Zones (AEZs) and Agro Ecological Management Units (AEMUs), for which individual Farm Plans prepared at Grama Panchayath level, which could be consolidated at Block Panchayath level with Production Plan and Procurement and Marketing Plans.

Micro-level coordination of line departments (Agri, VFPCK, Animal Husbandry, Dairy, Fisheries, Minor irrigation etc), co-operatives (Societies, Banks etc.), Kudumbasree, Farmers' groups, and FPOs at Panchayath level which could be expanded to block and district level for planning and implementation of natural resources management, production processes, procurement, processing/value addition and marketing.

The productive sector outlay stipulated as per Plan guidelines as not less 20 per cent of the Plan allocation of LSGIs. Scope for integration of infrastructure development/ investment funds of NABARD, Kerala Bank may be explored.

The four base pillars in production sector are 1) Inputs and Services, 2) Credit (includes co-operative credits), 3) Technology support, and 4) Marketing and Supply Chain. Seed village programmes under the aegis of panchayats, Strengthening Nursery registration and certification etc are to be addressed. The Central Govt. programmes for storage, marketing and value addition of agriculture produce should be effectively integrated in to panchyat plans.

In order to ensure effective integration and to avoid unnecessary expenditure on similar projects, various departmental schemes may be routed through LSGI plans. Effective integration with LSGIs and Irrigation department to harness the potential to agriculture is needed. A state guideline for MGNREGS may be formed based on central guideline which will be helpful to ensure efficient use agriculture labour.

Procurement and redistribution of agricultural and food produces in 'MILMA' model is to be attempted, refined and streamlined at different levels. Processing and value addition facilities to be arranged in the procurement/marketing centres to overcome the glut situations which could be coordinated by the platform led by LSGIs at Panchayath, and block levels with the corresponding officials though the PACS. District level coordination could be by the Asst. Director (Marketing) and District Manager, VFPCK under the leadership of District Panchayath.

Inclusion of representatives of co-operatives in the Working groups and GramaSabha, may support decision making regarding investments for infrastructure/buildings. Issuing privilege cards to food/agricultural producers for social recognition and getting priority in other services of the LSGIs and Govt. schemes, thus boosting the morale of farmers. Community based insurance programmes for agricultural sector is also recommended.

Need a plan for effective integration of Navakeralam Mission with agricultural development. Schemes like employment for 5 persons in each 1000 population, one local government one idea, one district one idea may be effectively integrated. District Planning Committees should take a lead role in these kinds of convergence programmes.

Chapter I
TWENTY FIVE YEARS OF DECENTRALISED PLANNING

Twenty five years have passed since the launching of the historic people's plan campaign (PPC). The State is celebrating the silver jubilee of PPC in 2021, and is getting ready for the Fourteenth Five Year Plan. A State taking to a plan of its own while the whole nation has chosen to abandon it is not an easy task. Special care and strategy and financing techniques are required. The 73rd and 74th Constitutional Amendments were passed by Parliament in December, 1992. Through these amendments local self-governance was introduced in rural and urban India. The Acts came into force as the Constitution (73rd Amendment) Act, 1992 on April 24, 1993 and the Constitution (74th Amendment) Act, 1992 on June 1, 1993. Thus 73rd and 74th constitutional amendments in 1993 marked a watershed in India's quests for democratic development within a pluralistic, parliamentary, electoral framework.

Kerala's achievements in the decentralised planning can be viewed as a good example to look at the process of micro planning in other states of India. Kerala made its first attempt to decentralise power to local level democratic institutions as early as in 1957, immediately after the re-organisation of the state. In 1961, the state assembly passed the Kerala Panchayat Act 1961, which paved the way for the formation of local bodies all over the state. The establishment of District Councils in 1987 led administrative decentralization to the district level. Following the national level Constitutional Amendments in 1992 (73rd and 74th), the Kerala legislative assembly passed the Kerala Panchayati Raj Act 1994. Two years later, the government (led by the Left Democratic Front) launched People's Planning Campaign (PPC) for democratic decentralization.

A quarter of a century after the enactment of the Kerala Panchayat Raj Act in 1994 and the beginning of Peoples Plan in 1996, inspire for an overview of the milestone in the history of decentralization in Kerala.

1.0. Some Emerging Concerns

1.1. Systemic failures to be identified for concerted action.

The basic objectives of the decentralisation amendments are to enhance the quality of service delivery and governance at the local level, promote participatory democracy and foster better State society relations. This demands significant transformation in local politics which has to be less hierarchical, more democratic, genuinely participative and accountable. We have to find solutions to the alarming waste management failure, threatening environmental sustainability, growing marginalization of the excluded notably the tribals, the weakening of the project of engendering local governance, lack of proper employment generation and so on. Several such issues need be acknowledged and addressed. These precisely are the issues that cannot be addressed in a division of labour approach, or functional assignment mode in a federal context. They need collective actions in which not only the State and local governments, but sometimes even the union government will have to step-in besides significant reorientation on the part of the decision makers.

1.2. Contextualizing the Nava Kerala Mission

The Nava Kerala Mission is very much helpful to find solutions for waste management issues through concerted initiatives like Haritha Karma Sena and the like. It also played a good role in enhancing agricultural production, rejuvenating water bodies etc. Evidently the Mission dispensation seeks to combine out-put oriented strategy and centralized implementation along with enlisting voluntary support. True, the Mission would encompass the administrative skills of the bureaucrats, the technical capabilities of the experts in the concerned field along with the qualities of guidance and direction which the political leaders may provide. But this presupposes the supply of a consistent and reliable data base for monitoring and decision-making that can be easily pressed into use such as the paddy data bank, land utilisation records, health progress data and so on. Even after 25 years of decentralised governance, municipalities and corporations fail to keep reliable data on the quantity of waste generated, its composition, information about landfills, and on the economics of solid waste. The Haritha Kerala Mission lacks a reliable data support system, and an integrated vision which takes land use planning into account. Even today, the role of LSGs in this endeavour remains unclear and ill-defined. Experiences over the years have shown that a top down agency approach is not a success, especially in solid waste management. The grim picture of waste management points out at the need for awareness creation, capacity-building and mobilisation of people. The new integrated Nava Kerala Mission is expected to surmount all the short coming and to move onto new horizons.

1.3. Urban Governance

It is a challenging issue that has to be seen in an integrated manner. Much of the problems arise out of to address the sprawling rural-urban continuum. Kerala's urban population increased from 4.7 million in 1981 to 15.9 million in 2011, a 3.4 times increase in three decades. More than the overall magnitude, the sharp 92.72% increase during 2001-2011 that make 50% of population urban has altered the dimensions of the problem. The huge growth in urban population during the past decade could be attributed to the increase in the number of census towns (from 99 in 2001 to 461 in 2011). Urban Kerala already has the highest monthly per capita consumption expenditure (MPCE) among the Indian States and exhibits an inordinate demand for consumer durables and conspicuous consumption. Municipal solid waste (MSW), liquid waste, medical waste and electronic waste have grown to alarming proportions largely because of this. Agricultural lands have been increasingly utilised for housing, roads, commercial establishment and so on. Under the Kerala Panchayat Raj Act, 1994 all public water courses including the beds and banks of rivers, streams, irrigation and drainage channels are vested 'absolutely' in the village panchayats. But the functions they provide do not continue to exist. There is what is called to borrow a Malayalam term "Thante Idom" which literally means "One's Space" which provides for individual convenience and ignores the much-needed common space. The waste disposable options with reference to the three Rs' – reduce, reuse, and recycle – will have to be strategically planned. The social cost of inaction and indifferent action can be irreparably large in terms of economic and health hazards such as land pollution, fresh water, ground water and sea pollution besides, loss of productivity and spread of diseases. There is a need to move

to sustainable urban development that is eco efficient, socially inclusive and economically beneficial. The 14th Plan will have to plan for urban governance in Kerala and must be integrated with the District Development Plan with adequate provision for rural functions and land use planning.

1.4. Inclusion of the Excluded

Admittedly social inclusion is the avowed goal of the Indian constitution and the 73rd/74th Constitutional Amendments are important ways to give operational content to it. Although Kerala does not witness the social conflicts that occur in the rest of India following the implementation of the decentralisation reforms the process of exclusion of the tribals, scheduled castes, plantation labour, fisher folk etc., is sharp in the State. Progress in social status, economic conditions, educational level, and political leadership and so on of the marginalised leave many things to be desired.

1.5. Streamline the Decentralised Planning Methodology

The people's plan campaign and the multi-stage methodology it evolved have changed local development planning from a techno-bureaucratic task to a people's project. PPC evolved a six stage methodology of plan formulation starting from the gram sabha/ward sabha meeting to the final approval by the District Planning Committee and project vetting process by the concerned officials. It widened the avenues of people's participation and democratic local governance. In the very first year of the 13th Plan some major changes were introduced in the guidelines for formulation and implementation of the Local Government Plans. An important objective of the new guidelines was to simplify the procedures so that delays can be avoided. But, in the current years, multiplying government orders and some other factors like compulsory allocations, GO projects etc. has happened, and that dilutes the concept of decentralisation. This has to be changed and Kerala placed on a new methodological regimen that will be autonomous and participatory.

1.6 Outlining the Strategies

Kerala has nearly two decades and a half of experience in the field of people's planning. This is the Silver jubilee year of decentralization campaign. In the light of these experiences, some changes, aimed at revitalising the system of decentralised democratic governance, were initiated during the last five years. This change is reflected in the timely preparation of plans by local governments, the integration of plan and budget, timely implementation and better utilisation of funds, opportunity for formulation and effective implementation of innovative projects, increasing allocation of funds to the productive sector, preparation of district plans and planning with the district as focus, formation of District Resource Centres and efficient disaster preparedness in the wake of natural disasters.

Chapter II
AGRICULTURE IN KERALA – AN OVERVIEW

Introduction

Over the last 50 years, agriculture has had a special and unique place in Kerala's economy. To begin with, agriculture served as a driver of economic growth by expanding the size of the rural home market. It was the presence of high-value, commercial crops in the cropping cycle – spices, plantation crops and rubber– that helped raise Kerala's rural incomes substantially. In 2018-19, spices and plantation crops accounted for 23 per cent of the total Value of Output (VOO) from crops. As a consequence, VOO per hectare (ha) of net sown area in Kerala was Rs.1745, comparable to Punjab's corresponding figure of Rs.1813.

Agriculture was also a successful contributor to structural change in Kerala's economy. In 2018-19, agriculture and allied sectors contributed only nine per cent to the Gross State Value Added (GSVA). Unlike India as a whole, this fall in agriculture's contribution to GSVA in Kerala was accompanied by a sharp fall in the number of workers employed in the primary sector; in 2018-19, only 19.3 per cent of the workers were employed in the primary sector in Kerala.

The important question that arises, then, concerns the future of Kerala's agriculture. Will it mirror the experience of the advanced capitalist world, where the agricultural sector's share has shrunk to less than three per cent of the economy, and where production is organised on corporate, industrial lines? Or will the sector be able to modernise itself to organise agricultural production on a larger scale, but based on non-corporate, more collective forms of production organisation and the adoption of advanced technology? Alternatively, will agriculture continue to retain the features of a small peasant economy, tied to a low-yield low-income cycle, striving to protect the livelihoods of landholders?

Major Features of Kerala's Crop Economy

Kerala's agricultural sector is marked by a set of features that sets it apart from other Indian States.

First, the share of non-agricultural area in the total geographical area of Kerala rose from about 7 per cent in the mid-1970s to about 12 per cent in 2018-19. Concurrently, the share of net sown area in the total geographical area fell from about 57 per cent to about 53 per cent. In addition, the share of fallow land (as a sum of current fallow, fallow other than current fallow and cultivable waste) in the total geographical area rose from about 1.7 per cent to 3.6 per cent.

This feature of Kerala's agriculture is significant. Because of the inflow of remittances and the sharp growth of the services sector, land is a highly valued commodity. Land prices in Kerala are among the highest among Indian States. The demand for land for non-agricultural purposes – construction of houses and non-farm establishments – is high. As a result, there is enormous pressure on agricultural land, and the conversion of agricultural land into non-agricultural land has been taking place legally and illegally. Unless returns from

agriculture rise faster than the returns from non-agricultural land, these trends are likely to continue and intensify over the next decade.

Secondly, within the land used for agricultural purposes, there was a shift from food grain towards non-food-grain crops. From about 9.5 lakh ha in 1970- 71, the area cultivated with food grains fell to 2.9 lakh ha in 2004-05 and 2 lakh ha in 2018-19. The precipitous decline in the area cultivated with paddy was the major reason for the shift. While a part of the area cultivated with food grain was diverted to non-agricultural uses, another part was used to cultivate non-food-grain crops. Thus, the area cultivated with rubber rose from 1.8 lakh ha in 1970-71 to 4.7 lakh ha in 1999-00 and 5.5 lakh ha in 2018-19. The area cultivated with coconut rose from 7.2 lakh ha in 1970-71 to 9.2 lakh ha in 1999-00, though it fell to 7.6 lakh ha by 2018-19.

The shifts in the cropping pattern after the 1970s also implied that Kerala's fortunes in agriculture were determined largely outside Kerala. The free trade policies of the Central Government after 1994 had a strong adverse impact on Kerala's agricultural sector. The prices of most commercial crops became increasingly integrated with global agricultural prices. Further, many of the promotional schemes with respect to these crops were designed and implemented by Commodity Boards under the Ministry of Commerce. Under the policies of neoliberalism, budget allocations for these Boards declined, and the production and marketing institutions supported by them were weakened. Such withdrawal did not just affect the sector adversely, but also burdened the State Government with new responsibilities at a time when its own fiscal space was shrinking.

Thirdly, the workforce involved in Kerala's agriculture has specific features. Data from the Situation Assessment Survey (SAS), conducted by the NSSO in 2012-13, showed that only 27 per cent of agricultural households in Kerala reported agriculture as a major source of income. The corresponding share for India as a whole was 61 per cent. To put it sharp, Kerala has a substantially smaller share of "full-time" farmers than India as a whole; most are "part-time" farmers. This feature has a major influence on the extent of time, the amount of effort, and the intensity of care given to farms. Most farms are maintained unscientifically, leading to low levels of investment, productivity, and income. This is also one reason why the extent of fallow land has risen over the years.

Fourthly, Kerala has a predominance of small and marginal farms; the average holding size, as per the Agricultural Census, is 0.18 ha or 0.45 acre. The smallness of farms is a major obstacle to farmers reaping the benefits of economies of scale as well as adopting modern technologies, particularly machines. Farm size is also a constraint in the aggregation of produce at the local-level, thus weakening the bargaining power of farmers in output markets. As a result, the producer's share of the consumer's rupee in Kerala's agricultural value chains is low. While farmer's collectives, such as cooperatives or farmer producer companies (FPC), can provide alternatives, their presence in the sphere of production is not a dominant feature of the State.

Fifthly, given the rise in the share of non- agricultural manual labourers in the work force, there are complaints related to the shortage of agricultural workers in Kerala's farms.

Agricultural activities are adversely affected due to this constraint across crops, but particularly in the cultivation of labour- intensive food grain. This phenomenon demands rapid mechanisation of agricultural tasks. However, the small size of most farms and the absence of machines suitable for purchase or use in these small farms have meant that the density of use of implements in Kerala is lower than in other States.

Sixthly, though Kerala has 41 west-flowing and three east-flowing rivers, and has an annual rainfall of about 3000 mm, the extent to which it is able to retain, store, and use these waters for agricultural purposes is still inadequate. The absence of adequate irrigation is one reason for the low productivity of crops. In addition, official data show a fall in the index of multiple cropping in the State. If the index of multiple cropping was 1.36 in 2001, it fell to 1.30 in 2011 and 1.26 in 2016.

In part, blame could be placed on the lop-sided emphasis on paddy cultivation in the design of irrigation projects; this led to disregard for the water requirements of other crops. But the historically inadequate emphasis in policy on small and medium irrigation projects, as well as minor-irrigation structures like check dams and lift irrigation projects, is also to be blamed. Further, the need for larger reservoir-like storage structures to store monsoon waters in the rivers in conjunction with smaller rainwater harvesting structures was never considered a priority item in previous plans in the State. Seventhly, productivity-levels are low in Kerala also because of unscientific and imbalanced farming practices.

Kerala is one of the lowest fertilizer-consuming States in India. In 2018-19, Kerala's consumption of N, P, and K fertilizers was 36.4 kg per ha, which was the lowest among all Indian States. The corresponding figure was 186.4 kg per ha in Tamil Nadu, 126 kg per ha in Maharashtra, 224.5 kg per ha in Punjab, 173.3 kg per ha in Andhra Pradesh and 161.1 kg per ha in West Bengal.

Kerala's consumption of N, P, and K fertilizers has declined alarmingly over the last decade, from 106.2 kg per ha in 2010-11 to 43.8 kg per ha in 2015-16 and 36.4 kg per ha in 2018-19. The implications of this decline for the sustenance of soil health have not been adequately studied.

Wide gaps exist between the requirement and sales of major fertilizers in Kerala. In September 2019, 3500 metric tonnes of di-ammonium phosphate were required, while only 1831 metric tonnes were sold. Similarly, 11,000 metric tonnes of muriatic of potash were required, but only 8339 metric tonnes were sold. On the other hand, 9000 metric tonnes of urea were required, but 11,578 metric tonnes were sold. Such imbalances, at wide variance from the official Package of Practices, have been a major constraint on the scientific practice of agriculture in the State.

Finally, while agriculture in Kerala is practiced in homesteads, marked by inter-cropping and multiple- cropping, most plan schemes of the Government are crop-centred. More recently, the focus of the Department of Agriculture has turned to planning for agro-ecological units, which is commendable. However, the design and implementation of schemes continue to be crop-centred. In addition, while livestock and fisheries are an integral part

of the homestead systems of farming, these components are the domain of different departments, which presents challenges in the convergence of activities at the ground-level.

Performance of Agriculture during the 12th Five- Year Plan and 13th Five-Year Plan

Trends in Gross State Domestic Product (GSDP), Gross State Value Added (GSVA) and Value of Output (VOO).

For the data on Gross State Domestic Product (GSDP) and Gross State Value Added (GSVA) from agriculture in Kerala, two series are constructed: the first of real GSDP between 1980-81 and 2013-14 based on the base year of 2004-05 and the second of real GSVA between 2011-12 and 2018-19 based on the base year of 2011-12 (Figure 2.1). The GDP from agriculture began to rise from 1987-88 till 1997-98, and stagnated thereafter till 2013-14. The GSVA from agriculture fell sharply between 2011-12 and 2015-16. Between 2011- 12 and 2015-16, the GSVA from agriculture fell by Rs.6258 crore in real terms. Thereafter, it stagnated and then fell again in 2018-19 and 2019-20 because of the adverse impact of the two major floods. In sum, there were no major stretches of growth in Kerala's agriculture after 1997-98.

After 2015-16, as part of the conscious policy interventions under the 13th Plan, the downward slide in agriculture was halted. If floods had not hit Kerala in 2018 and 2019, the agricultural growth rate in 2018- 19 and 2019-20 would have been positive and high. Estimates show that damages to the crops sector due to the floods in 2018 alone were to the tune of Rs 2,722.5 crore. These included the destruction of irrigation systems and structures, destruction of crops, agriculture buildings and assets and soil degradation. Estimated production losses in the crop subsector were estimated at Rs.3, 558.2 crore. About 89,610 ha of crops suffered. About 30,945 ha of perennial crops were destroyed; pepper, arecanuts, banana and coconut were the most affected. Over 109 million trees and plants were completely damaged (Government of Kerala 2018).

In addition to GSDP and GSVA, we also use data on value of output (VOO) in agriculture put together by the Central Statistics Office (CSO) (Figure 2.2). Here too, we see that the VOO fell between 2011-12 and 2015-16 by about Rs.5741 crore. There was no sign of revival at least till 2017-18.

Another interesting feature has been the declining share of the crop sector within the fortunes of the larger rubric of agriculture and allied sectors. If we consider GSVA figures, the crop sector had a share of 60 per cent in the overall GSVA in 2011-12 (Table 2.1). This declined to 53.2 per cent 2019-20. On the other hand, the share of the livestock component rose from 23.3 per cent to 26.7 per cent. The share of fisheries component also rose from 7.8 per cent to 10.2 per cent.

Agriculture and allied sectors hold a significant position in any development process with its role in engaging and employing people, providing food and ensuring food security and raw materials. Agriculture is a pivotal sector for the economy to achieve the Sustainable Development Goals (SDG) of no poverty, zero hunger, and good health and well-being. With decline in the size of land holdings in agriculture, the State has to focus on production,

productivity, and profitability to attain the SDG targets and sustainability in agriculture.

Crops, livestock, fishing, and forestry contributed 8.03 per cent to Kerala's Gross State Value Added (GSVA) in 2019-20 (constant prices). The share has been falling steadily over the years. The agricultural sector in Kerala has undergone significant structural changes in the form of decline in share of Gross State Domestic Product (GSDP) indicating a shift from the agrarian economy.

Agricultural performance is subject to year to year fluctuations due to vagaries of nature as well as price volatility. The natural disaster that hit the State in the form of floods and landslides in 2018 and 2019, had affected the agricultural sector the most.

Trends in Growth Rate

At the national level, the share of crops, livestock, forestry, and fishing sector in Gross Value Added (GVA) has shown decline over the years from 17.8 per cent in 2013-14 to 14.6 per cent in 2018-19. The share of crops in GVA declined from 11.4 per cent in 2013-14 to 8.2 per cent in 2018-19. The all India growth rate of agriculture and allied sectors has been fluctuating as seen in Table 2.1.1.

Table 2.1.1 Percentage change in GVA in agriculture and allied sectors

Year	Growth rate per annum (%)
2013-14	5.6
2014-15	(-)0.2
2015-16	0.6
2016-17	6.8
2017-18	5.9
2018-19	2.4

Source: National Accounts Statistics, 2020

However, the importance of agriculture for the livelihood of the rural population and food security of large masses is significant in the economy. As per the Census of 2011, the agriculture sector in India employed 263 million workers. Out of these, 45 per cent were cultivators while 55 per cent worked as agricultural labourers.

The agriculture sector in Kerala has been facing challenges with regard to its growth. According to the data from the Directorate of Economics and Statistics (DES), the annual growth rate (GSVA at constant 2011-12 prices) of agriculture and allied activities (including crops, livestock, forestry and logging and fishing and aquaculture) was (-) 6.31 per cent in 2013-14, 0.02 per cent in 2014-15, (-) 5.10 per cent in 2015-16 and (-) 0.65 per cent in 2016-17. The sector witnessed a growth of 2.11 per cent in 2017-18. But the growth declined to (-) 2.38 per cent in 2018-19 and further to (-) 6.62 per cent in 2019-20. In 2018-19, fishing and forestry sector in the State had shown positive growth rate with, 6.55 per cent and 0.54 per cent respectively, while the rest of the sectors had displayed negative

growth rate. In 2019-20 all the sectors had shown negative growth rates.

On a positive note, as per SDG India Index 2019, even though the share of agriculture and allied sector in GSVA is negligible, Kerala ranks third in India with respect to GVA in agriculture per worker at Rs. 2.19 lakh.

The share of agriculture and allied sectors in total GSVA (at constant 2011-12 prices) of the State has witnessed a secular decline from 12.37 per cent in 2013-14 to 8.03 per cent in 2019-20. Details are provided in Table 2.1.2

Table 2.1.2 Share of agriculture and allied sectors in GVA/GSVA National and State level, at constant prices 2011-12, from 2013-14 to 2019-20, in per cent

Year	Share of agriculture and allied sectors in total GVA (India)	Share of agriculture and allied sectors in GSVA (Kerala)
2013-14	17.8	12.37
2014-15	16.5	11.92
2015-16	15.4	10.74
2016-17	15.2	9.96
2017-18	15.1	9.60
2018-19	14.6.	8.83(P)
2019-20	n.a	8.03(Q)

Notes: (P) Provisional, (Q) Quick; n.a.= not available.
Sources: National Accounts Statistics 2020, GoI; Directorate of Economics and Statistics, GoK Land Use

Kerala has witnessed major changes in its land use pattern over the years. The major change was the shift from cultivation of food crops to non-food crops and increase in area under land put to non-agricultural use. Changes in land use and cropping pattern in Kerala pose a challenge not only to food security but also to the ecological sustainability of the State. An analysis of changes in land use pattern over a period helps to comprehend the present scenario of agricultural land utilisation. Data on land use pattern for the year 2019-20 is given in Appendix 3.1.2.

As per the land use data of 2019-20, out of a total geographical area of 38.86 lakh ha, total cultivated area is 25.89 lakh ha (66.64 per cent) and the net area sown is 20.26 lakh ha (52.13 per cent). Land put to non-agricultural use is 11.73 per cent and forest area is 27.83 per cent. The cultivable waste and current fallow constituted 2.57 per cent and 1.48 per cent respectively.

Compared to 2018-19, there is increase in area under barren and uncultivated land, land under miscellaneous tree crops, land put to non-agricultural uses, cultivable waste and

fallow lands other than current fallow by 3.29 per cent, 1.18 per cent, 0.41 per cent, 3.43 per cent and 3.05 per cent, respectively. The area under cultivable waste increased by 3,313 ha and fallows other than current fallow by 1390 ha. The net area sown decreased by 0.37 per cent.

The total cropped area and area had sown more than once increased by 0.73 per cent and 4.92 per cent respectively. The cropping intensity increased from 126 per cent to 128 per cent.

Chapter III
CROPPING PATTERN& MAJOR STATE AND CENTRAL SECTOR SCHEMES IN KERALA: AN OVER VIEW

Cropping Pattern

Food crops comprising rice, tapioca, sweet potato, millets, and pulses accounted for 9.88 per cent of the total cropped area in 2019-20 while cash crops (cashew, rubber, pepper, coconut, cardamom, tea and coffee) constituted 61.6 per cent. The area under crops like rubber, coffee, tea, and cardamom was 27.5 per cent of the total cropped area.

Coconut occupies the largest area with 29.3 per cent coverage followed by rubber with 21.28 per cent. Rice comes third with 7.37 per cent of the total cropped area. Compared to 2018-19, area under tapioca showed an increase of 0.31 per cent and area under pulses declined by 229.54 ha with a decline in production by 197 tonnes recording 2260.46 ha and 2103 tonnes respectively. Among other crops, arecanut, coffee, cashew, banana, cardamom, and pepper recorded an increase in area over 2018-19. Ginger, turmeric, tea, and coconut recorded a decline in area. Banana recorded the highest increase in area with 14.7 per cent over 2018-19. There was an increase in production for banana, cashewnut, coffee and other plantains.

Crop-Wise Analysis

Rice

Rice is the major food crop cultivated in the State occupying 7.37 per cent of the total cultivated area. On analysing the area under paddy cultivation for the last 10 years, the area under wetland paddy cultivation was highest in 2010-11 recording an area of 2.13 lakh ha with a production of 5.23 lakh tonnes.

During the period of the 13th Five Year Plan, the downward slide in the area cultivated with paddy could be arrested. In 2015-16, 1.97 lakh hectares was cultivated with paddy in the State. In 2019-20, 1.98 lakh hectares was cultivated with paddy. This was in contrast to earlier plan periods, where the area cultivated with paddy consistently fell. Table 3.1.3 depicts the change in area of wetland and dry land paddy over the period from 2015-16 to 2019-20. It may be noted that the area under harvested paddy, despite the severe and unfavourable weather conditions, which led to substantial crop loss across the state, has been maintained in a steady manner.

The total area sown in the state under paddy was reported as 2.31 lakh hectare by the Department of Agriculture Development and Farmers Welfare. As per the data of the department an area of 0.33 lakh ha was affected due to natural calamities and total harvested area under paddy was 1.98 lakh ha. But for the unprecedented crop loss of 0.33 lakh ha, the paddy area would have risen.

Vegetables

Vegetable production in the State has gained momentum over the past years. The production which was 7.25 lakh metric tonnes from an area of 52830 ha in 2016-17 increased

to 12.12 lakh tonnes from an area of 82166.55 ha in 2018-19 which is an increase of 55 per cent in area and 67 per cent in production. The vegetable production in 2019-20 was 14.9 lakh tonnes from an area of 96,313 ha which is an increase of 17 per cent and 23 per cent in area and production, respectively, compared to 2018-19. (Source: Department of Agriculture Development and Farmers Welfare)

The increase in area and production of vegetables in the State can be attributed to the support provided through vegetable development programmes implemented by the State Department of Agriculture Development and Farmers Welfare, Vegetable and Fruit Promotion Council, Kerala, State Horticulture Mission, Local Self Government Department and Kudumbasree. Vegetable cultivation in homesteads, vegetable clusters including urban, staggered, and graded clusters, institutions, rain shelter cultivation and micro-irrigation and fertigation support were the activities promoted for vegetable cultivation in the State in 2019-20.

Organic Farming/Safe to Eat Vegetable Cultivation

The State is on the path of promoting safe to eat vegetable cultivation through good agricultural practices. Agriculture Development and Farmers' Welfare Department, Vegetable and Fruit Promotion Council, Kerala, and State Horticulture Mission played a key role in promoting organic farming through adoption of organic village by cluster approach. In 2019-20, organic cluster cultivation was promoted through formation of 200 GAP (Good Agricultural Practices) clusters in 5000 ha with a contiguous area of 25 ha per cluster and production of 25,000 MT. A total of 1405 GAP clusters extending to 64,095 ha exist in the State. Under PKVY (Paramparagat Krishi Vikas Yojana), a total of 619 organic clusters extending to 12,380 ha have been established in the State. The marketing of organic products was facilitated through ecoshops functioning in the State. Of this 11 ecoshops were newly established in 2019-20. (Source: Department of Agriculture Development and Farmers Welfare)

Coconut

In India, coconut is cultivated in 16 States and 4 Union Territories with 89.4 per cent of area and 91.6 per cent of production contributed by the southern States of Tamil Nadu, Kerala, Karnataka, and Andhra Pradesh. As per the second advance estimate 2019-20, the area and production of coconut in the country is 2.153 million ha and 21308.41 million nuts respectively. Kerala stands first in terms of area and production and in terms of productivity Andhra Pradesh stands first followed by West Bengal (Source: Coconut Development Board)

Although coconut is one of the principal crops, its cultivation in the State has not been encouraging over the years. The area, production and productivity of coconut which showed a marginal increase in 2018-19 has recorded a decline in 2019-20.

Coconut, cultivated in 7.61 lakh ha occupies 29.3 per cent of the gross cropped area. Compared to the area under coconut cultivation in 2010-11, 1.26 per cent decline has been observed during the last decade in the State. The decline in production was 8.9 per cent during the last decade indicating the comparatively low per ha productivity of coconut in the State.

A marginal decrease in area to the tune of 0.02 per cent and production and productivity by 9.15 per cent and 9.13 per cent respectively was observed in 2019-20 compared to 2018-19.

MAJOR STATE AND CENTRAL SECTOR SCHEMES IN AGRICUTURE

A) STATE SCHEMES

Rice Development

The scheme on rice development thrusts upon promotion of paddy cultivation in the state through group farming and area expansion programmes like fallow land cultivation, single crop to double crop and upland rice cultivation concentrating on the rice growing agro ecological units with natural endowments for augmenting rice productivity.

Development and Promotion of Location Specific Crops

In order to promote the cultivation of minor millets, oil seed crops like groundnut and sesamum and sugarcane in specific AEUs, assistance is provided for procurement of quality seeds, land preparation, irrigation and other cultivation requirements.

Promotion of crop production activities in tribal lands so as to ensure food and nutritional security to tribal population focusing on activities including conservation of traditional varieties and traditional practices with proven scientific basis is also included.

Vegetable Development

During 2021-22, the Vegetable Development Programme will be implemented in the state as part of Subhiksha Keralam Programme, with the objective to promote vegetable production in the state in a safe-to-eat manner and to attain self-sufficiency in the sector. The scheme will be implemented in a Mission Mode involving all the stake holders in this sector such as Agriculture Development & Farmers Welfare Department, PACS, FPOs, Kerala Agricultural University, LSGDs, VFPCK, Horticorp and SHM. Co-ordination of all PSUs, ATMA, Organic Farming (GAP, PGS System), Marketing, infrastructure programmes shall be ensured for the success of the programme. Homestead cultivation will be promoted in all the households in the State for producing Safe to Eat vegetables throughout the state.

Promotion of Pulses & Tubers

In order to augment the area and production under various pulse crops viz. cowpea, green gram, black gram, red gram, soya bean and others in the garden lands as well as in 3rd crop rice padasekharams an amount of 60.00 lakh is provided. Focus will be given to Onattukara region. An amount of 90.00 lakh is set apart for development of tuber crops, which includes production and supply of source planting materials and seed multiplication through seed villages. Out of this 10.00 lakh is for seed multiplication in tribal areas. Promotion of tubers will be with technical collaboration of Central Tuber Crops Research Institute and KAU.

Coconut Development

The strategy proposed for coconut development is integrated development of holdings aimed at maximising income from unit area through better agro management practices and promotion of multi species cropping and farming systems. Further, there is an emerging

need to enhance the production and productivity through replanting with new and high yielding palms and follow better management practices. A coconut council has been formed in the state with specific objectives to achieve this target.

Development of Spices

The major components included under the scheme are establishment of decentralised pepper nurseries, revitalization of existing pepper gardens, assistance for area expansion of ginger, turmeric, nutmeg and clove and integrated pepper development in Idukki.

Hi - Tech Agriculture

During the year 2021-22, an amount of 190.00 lakh is earmarked as support for establishment of Micro Irrigation/ Fertigation/ Open precision Farming as additional subsidy to top up Centrally Sponsored scheme of PMKSY on the concept of Per Drop More Crop. 25 percent assistance will be provided from state plan fund.

State Crop Insurance Scheme

The crop insurance scheme was in operation covering 25 major crops grown in the State since 1995 was restructured in 2016-17 by bringing considerable enhancement in the crop loss compensation. The Crop Insurance Fund is operated with contributions from the participating farmers by way of registration fee and premium and Government contribution. In addition to the existing crops, minor fruits apiculture and floriculture will also be included under the scheme. An amount of Rs.2000.00 lakh is earmarked for the scheme during 2021-22.

Arecanut Package

Arecanut is one of the major plantation crops of Kerala, especially in northern districts. Arecanut sector is showing a declining trend, both in terms of area and production. This is mainly due to incidence of diseases like Mahali (fruit rot) which needs high cost for plant protection measures, non-availability of good quality planting materials and also lack of institutional support which has led to disinterest among arecanut farmers in adopting scientific cultivation practices. Hence it is proposed to provide assistance for area expansion, plant protection and other management practices. Marketing network for arecanut and value added products will be established.

Crop Health Management

Crop health is an important element of sustainable agriculture and hence a strategy for pest management has to be identified scientifically. Strategies need to recognize that crop health is an essential element of sustainable agriculture. Improvements in integrated pest management can lead to sound crop health management. The approach of crop health management will bring together management towards sustainable ecosystems and people's health through Good Plant Protection Practices (GPPP).

Systematic surveillance and advisories will be provided to the farmers through advisories. The number of surveillance plot will be decided based on cropping pattern of the selected panchayats.

Organic Farming and Good Agricultural Practices

During 2021-22, it is proposed to assist organic farming and the components of the scheme include assistance for certification, empowerment of GAP clusters, promotional assistance for GAP clusters, green manuring, model units for organic manure preparation and Safe to Eat food production including Participatory Guarantee System (PGS) certification through VFPCK, Krishibhavans and other stake holders like FPOs.

Organic farming of fruits and vegetables through VFPCK and Krishibhavans will be promoted. The assistance from centrally sponsored scheme Paramparagat Krishi Vikas Yojana (PKVY) will also be utilized for supporting organic farming for developing organic farming clusters and providing financial assistance.

Production and Distribution of Quality Planting Materials

Planting material is a basic and critical input for agricultural production. Inadequate availability of quality seeds, planting materials and germ plasm are major constraints limiting productivity. In order to meet the demand of quality planting materials it is necessary to upscale the production of planting materials from the departmental farms ensuring quality of the seeds/planting materials.

The Departmental Farms are to be modernised to function not only as production centres of quality planting materials but also as centres of demonstration of advanced agricultural technology for Hi-Tech farming. The farms have to be with basic as well as sophisticated infrastructural facilities like green houses, irrigation support, tissue culture and hardening facilities, seed processing and storage facilities. In the case of District farms and Seed farms, the departmental programmes will be restricted to filling the gaps. But in the case of thirteen specialised farms, the Department will cater to all the requirements and make them commercially viable. Cheengeri extension scheme of Wayanad also included for implementing activities.

Punarjani- Restoration of Agricultural Sector in Post Flood Scenario

Heavy flood and other natural calamities which occurred during 2018 & 2019 has caused heavy loss to standing crops as well as stored products, machinery, storage structures, infrastructure facilities etc. in farmers' fields as well as in department farms, office buildings etc. Moreover loss to agricultural land needs to be compensated. The scheme envisages to revive the damages caused in floods and landslides of 2018 and 2019. Employment and income generation activities will be given more thrust.

Rejuvenation and area expansion of major crops, rejuvenation of infrastructure development of padasekharams and garden lands, mechanization, development of markets, nurseries, office buildings and farms under department of agriculture, rejuvenation of agricultural land damaged completely by landslide/landslip will be undertaken. This also includes drought mitigation activities like water harvesting and soil and water conservation.

Strengthening Agricultural Extension

The success of all agricultural development strategies depends on the adoption of scientific technology by the farmers. In order to improve income of the farmers, a field visit oriented

extension system is essential in the state. The ATMA model of Agricultural extension with suitable modification integrated as ATMA plus could be popularized with appropriate convergence at the higher level with co-ordination at the lower level among the departments in the productive sector.

Farm Information and Communication

The Farm Information Service provides information and communication support for agricultural development. The scheme aims at the development of information dissemination through the use of mass and electronic media including web based services. Expansion of information services and supporting activities are included. A full-fledged information cum data centre at the headquarters with appropriate system for regular reporting and delivery of information with the modern communication systems leading to cyber extension would be aimed.

Agro Service Centres and Service Delivery

Agro Service Centres (ASC) are established at block level to facilitate integration of services like mechanisation, ATMA based extension, credit support, weather advisory services, soil testing support and other technology based services. In order to provide full-fledged service to the farmers at a single point, it is necessary that the various requirements of farmers such as agricultural inputs, farms related information like credit, marketing etc. are brought under a common service centre. The Agro Service Centres support transfer of technology and service delivery. The Panchayat Raj institutions are expected to provide additional infrastructure support to the Agro Service Centres. These centres act as technology and information disseminating centres with facilitating role in field visits. A mobile farm clinic is also established at the block level to provide solution to the field problems equipped with audio-visual and online support. The Agro Service Centres work to support the ATMA activities as well as mechanization. The farmers service centers proposed at the block level under the Cooperation Department will be linked with the Agro Service Centres for input delivery.

Krishi Padasala - Approach to AEU based Cultivation

The farmers have to be made aware of the concept of AEU based cultivation as well as updated on scientific and technological aspects at field level for profitable cultivation. With the objective of imparting knowledge to farmers on these aspects, an amount of 50.00 lakh is earmarked.

The training and awareness programmes proposed under various schemes will be coordinated and conducted by SAMETI. A comprehensive training module and training calendar for the year 2021-22 will be prepared and programmes scheduled accordingly with the approval of Director of Agriculture.

Block Level Agriculture Knowledge Centers functioning in Blocks, with scientist of Kerala Agriculture University as a nodal officer will serve as an advisory body in providing technical guidance to field level offices and farmers in the successful implementation of programmes implemented through Krishi Bhavans. Expenses towards remuneration/honorarium are not included.

Development of Fruits, Flowers and Medicinal plants

A massive programme for fruit development introduced in 2020-21 in the state with the objective of popularizing cultivation of fruit crops will be continued. Production and supply of planting material, area expansion programmes, management, harvesting, cold storage, processing, value addition and marketing, supply chain development and all programmes for holistic fruit promotion and enhancement of farmers' income will be supported through this scheme. Thrust will be given for promotion of exotic fruits like litchi, rambutan, avocado, mangosteen etc. in addition to indigenous fruits. Homestead and commercial cultivation of fruits will be promoted. The project will be implemented by the Department of Agriculture Development and Farmers Welfare with the support of Kerala Agricultural University, VFPCK and Horticorp. The fruit development programme will be phased out for a period of 10 years.

Soil and Root Health Management & Productivity Improvement

The improvement of soil health is essential for augmenting crop productivity considering the depleted nutrient status of the soil resource of the state. Based on soil testing, service would be rendered with more focus on application of soil test results for improving the productivity of crops.

Quality inputs for correcting the soil pH and also for providing secondary and micro nutrients to supplement crop production will be provided based on soil analysis. The input supply will be soil test based and the quantity of input requirement will be as per the KAU recommendation. A major intervention in management of soil acidity is required to improve crop productivity.

Revitalisation of Agriculture Sector in Wayanad

The agrarian economy of Wayanad district has been under distress in recent years. Wide fluctuation in prices has brought in high degree of instability in farm incomes. The State and Central Government have come out with intervention packages for the revival of the livelihood of the affected population. In addition, natural calamity during south west monsoon period of 2018 and 2019 has caused huge crop loss and destruction of land. In order to revive the agrarian economy of the district, it is proposed to implement a cafeteria of focused intervention, with appropriate backward and forward integration.

Pepper cultivation in the district is already in the declining phase due to the incidence of pests and diseases, loss of erythrina standards due to insect attack as well as declining productivity.

Post-harvest Management & Value Addition

Post-harvest management and value addition/agro processing have a very crucial role in improving the Kerala economy and the income of the farmer from agriculture sector.

Kerala Farm- Fresh PazhamPachakkari base price

The scheme aims to provide financial support to farmers for 16 items of vegetables and fruits in the event of decline in prices. The difference in price from the bench mark price fixed for each item will be provided as agriculture incentive price to farmers. The base prices

(a kg) that came into force in the State from 1st November 2020, are as follows: tapioca (Rs. 12), Nendran banana/Wayanadan Nendran (Rs. 30/Rs. 24), pineapple (Rs. 15), ash gourd (Rs. 9), cucumber (Rs. 8), bitter gourd (Rs. 30), snake gourd (Rs. 30), string beans (Rs. 34), tomato (Rs. 8), ladies' finger (Rs. 20), cabbage (Rs.11), carrot (Rs. 21), potato (Rs. 20), beans (Rs. 28), beet root (Rs. 21) and garlic (Rs. 139).The produce will be procured through the outlets of the Agriculture Department, VFPCK and Horticorp, and the Primary Agricultural Credit Cooperative Societies.

Contingency Programme to meet Natural Calamities and Pests and Disease Endemic
The scheme is intended for creating a buffer stock of seeds of paddy and other annual crops for distribution to affected farmers in the event of natural calamities and resultant crop damages. Assistance for strengthening of bunds to prevent breaches during floods and for removal of debris will be in a need-based manner.

Bio Diversity and local Germ Plasm Conservation and Promotion
It is proposed to conserve the traditional and indigenous varieties available indifferent crops, including paddy and millets, especially in tribal habitats by providing assistance for cultivation and multiplication of seeds of these varieties by tribal, local farmer clusters, and other organizations. Provision under the scheme would be utilized for procurement and distribution of seeds of these traditional varieties for promotion of cultivation in other areas and districts. The organic farming cell at the Directorate of Agriculture will maintain a registry of the indigenous varieties of all crops.

B) CENTRALLY SPONSORED SCHEME – 40% STATE SHARE
Umbrella Scheme on Krishi Unnathi Yojana and other CSS (40% State Share)
As part of rationalisation of CSS, the number of schemes was reduced and a new concept of umbrella schemes was introduced incorporating the schemes suitable to the state and having the flexibility to implement and design sub-schemes. The central budget will provide allocation under each umbrella scheme based on a transparent criterion. In order to facilitate scheme implementation, all the other CSS on Agriculture are also included in the umbrella scheme.

Krishi Unnathi Yojana is the umbrella scheme under Agriculture with 60% central share and 40% state share. The state share of ongoing centrally sponsored schemes viz. National Food Security Mission (NFSM), Mission on Integrated Development of Horticulture (MIDH), National Mission for Sustainable Agriculture (NMSA), National Mission on Oil seeds and Oil palm (NMOOP), National Mission on Agriculture Extension and Technology Management (NMAET), Rashtriya Krishi Vikas Yojana (RKVY), Paramparagath Krishi Vikas Yojana (PKVY), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), National project on Agro Forestry, Sub Mission on Plant Protection and Plant Quarantine, Information Technology, Integrated scheme on Agriculture Marketing and GOI supported Crop Insurance scheme are included under the scheme.

C) CENTRALLY SPONSORED SCHEME – 60% CENTRAL SHARE

Umbrella Scheme on Krishi Unnathi Yojana and other CSS (60% Central Share)

As part of rationalisation of CSS, the number of schemes was reduced and a new concept of umbrella schemes was introduced incorporating the schemes suitable to the state and having the flexibility to implement and design sub-schemes. The central budget will provide allocation under each umbrella scheme based on a transparent criterion. In order to facilitate scheme implementation, all the other CSS on Agriculture are also included in the umbrella scheme.

Krishi Unnathi Yojana is the umbrella scheme under Agriculture with 60% central share and 40% state share. The state share of ongoing centrally sponsored schemes viz. National Food Security Mission (NFSM), Mission on Integrated Development of Horticulture (MIDH), National Mission for Sustainable Agriculture (NMSA), National Mission on Oil seeds and Oil palm (NMOOP), National Mission on Agriculture Extension and Technology Management (NMAET), Rashtriya Krishi Vikas Yojana (RKVY), ParamparagathKrishiVikasYojana (PKVY), Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), National project on Agro Forestry, Sub Mission on Plant Protection and Plant Quarantine, Information Technology, Integrated scheme on Agriculture Marketing and GOI supported Crop Insurance scheme are included under the scheme.

A LIST OF PROJECTS IMPLEMENTED BY ONE LOCAL BODY FROM EACH TIER – 2020-21 & 2021-22

2020-21
Grama Panchayath
Providing Basic Facility for Vegetable Stall in Grama panchayth shop
Jaiva Samridhi - Fallow Land Cultivation
Vegetable Cultivation- Women-General
Providing Additional Facilities For Vegetable Market
Block Panchayath
Anganwadi Jaivagramam - Promotion of Vegetable cultivation in Anganwadis
Hai Honey and Mushroom
Kedaram-Samagra NelKrishi-Block Panchayath Share
Nedumangad Block 2019-2020- ADA Office Construction in Nedumangad Block Panchayath Compound
District Panchayath
State Seed Farm Chirayinkeezhu - Productivity improvement project
Productivity improvement in state seed farm ulloor
Harithakeralam-Kedaram-Integrated Paddy Development

Productivity improvement of Coconut nursery Kazhakoottam

Productivity Improvement

Vegetable cultivation - Farms in the agricultural plots in onam season

Safala- Banana cultivation and Vegetable cultivation in fallow

State Seed Farm, Chirayinkeezhu - Productivity improvement project

HarithaKeralam-Jaivasamridhi-Establishing demonstration plots in fallow lands

Productivity improvement of Coconut nursery, Kazhakoottam

Productivity Improvement

Productivity Improvement of Ulloor Farm

Harithakeralam-Kedaram-Integrated Paddy Development

Thampuran Nadayil Mullramcode ElaMethikulam Construction Ottoor GP

Ulloor State Seed Farm Gate Balance Work

Solar fencing in VithuraJersy farm

Chemboor Karshika Vipanakendram Completion works

solar fencing for chttachl jersey farm

2021-22

GramaPanchayath

HarithaBhavanam

Subhiksha Keralam Fallow Land Cultivation

Fruit Plants Distribution

Vegetable Cultivation- Women-General

Block Panchayath

Jaivagramam- Nutrition garden

Samrudhy- fruitplants in public places

Jaivasamrudhy-Model Demonstration Plots

Kerasamrudhy -Samrudhy Coconut Nursery-Keragramam

Nedumangad Block Panchayat Jaivagramam - Maintananc of Polyhouse

Kedaram Samagra NelKrishi-Block Panchayath Share to Vembayam GramaPanchayat

District Panchayath
Productivity improvement state seed farm ulloor
State Seed Farm Chirayinkeezhu - Productivity improvement project
Productivity improvement
Kazhakootam coconut nursery productivity improvement
Peringamala farm onam vegetable cultivation
Harithakeralam-Kedaram-Integrated Paddy Development
Mixed farming in public place LSGD
Solar fencing for Kattachal jersey farm
Paddy Harvesting machine for women
Exhibition of model agriculture farm Medicinal Plant farming Nursery and seed production centres and barren village (Women)
Coconut nursery and other nurseries at Peringamala farm
Horticulture therapy and agriculture nursery at Venjaramoodu care home

Chapter IV
ISSUES AND INITIATIVES

Majority of the programmes in the agricultural sector is concentrated on supply of planting materials, organic manure, fertilisers, urea, small scale machinery, subsidy for paddy as well as vegetable cultivation, etc. A perusal of the schemes and projects being implemented through the state department of agriculture and the local government bodies (outlined in previous chapter) testimonies this. The Padasekhara samities formed for building basic infrastructure in agriculture sector are not taking up projects in supply of motor pump sets, wells for irrigation, accessories, marketing of local produce, supply chain for agriculture produce etc.

The introduction of subsidy for agriculture services initiated to encourage mechanised agriculture has not got converted into projects. The benefit of subsidy for mechanisation is now available only to Samities and groups. This should be extended to small scale and marginal farmers interested in practising mechanised agriculture. The stipulation that only agriculture services supplied through agro service centres of agriculture department is eligible for the subsidy has adversely affected the Performance.

The present guidelines for project formulation fail to mention projects related to containment of pest infestation, medicinal plants, mixed farming, etc. Projects integrating credit component from PACS and other loans, one time interest subsidy etc. for encouraging cultivation of tree crops which in turn would lead to conservation of environment as a whole have not materialised. The numerous forms and guidelines are creating hindrance for expanding the scope of the projects. Projects aiming at better service delivery to farmers, including inputs and produce aggregation, utilising youth and women could be included in the local body plans. Door step delivery of Agriculture and animal husbandry services is very much essential in the time of pandemic and social distancing. However such are rarely seen.

Fallow free village, Harithasamrudhi ward, and Haritha Bhavanam programmes of Haritha Kerala mission, integrating waste management, water conservation, and energy conservation in every household were seriously missing in the form of LSGD projects. Only few local bodies have attempted to formulate projects complementing the Haritha Kerala mission objective of decomposing organic waste and channelising it to the agriculture sector. Only few LGs have systems to divert such processed organic waste for agriculture activities.

Model projects integrating crop cultivation, soil and water conservation, animal husbandry, dairy, fisheries, beekeeping etc.has not come up in adequate scale and number. Interventions by integrating various department projects, MGNREGS, programmes of various Boards, people participation as well as CSR Fund etc. are lacking in the LG projects.

Collective Farming through Kudumbasree

Collective farming is an important area of Kudumbasree, which aims at food security both at household and community levels. The major crops cultivated are paddy, vegetables and

banana. In 2019-20, the area brought under cultivation of paddy was 8105 ha, vegetables 6575 ha and banana 11,325 ha. Other crops were cultivated in 9673 ha. In comparison with the area covered in 2018-19, the area taken up under all the crops through collective farming has declined.

Agricultural Marketing

The market network under the State Department of Agriculture comprising of six wholesale markets in urban and rural areas, one District-level procurement centre, 256 vegetable cluster markets, 37 Block Level Federated Organisations, 466 ecoshops, 398 weekly markets, 369 markets under HORTICORP, and 307 markets under VFPCK catered to the marketing requirement of agricultural products and reasonable prices to farmers. In addition, 16 Haritha Group markets and 28 markets established under various programmes in the State also facilitated local marketing of produce. The ecoshops catered to marketing of organic as well as Good Agricultural Practices (GAP) certified products and bio inputs to farmers for crop production. (*Source: Department of Agriculture Development and Farmers Welfare)*

The 288 Swasraya Karshaka Samithies established under VFPCK throughout the State, and retail outlets functioning in franchisee mode or directly under these farmer markets, facilitated marketing of fruits and vegetables thereby ensuring fair price to the farmers. A quantity of 92129 metric tons of fruits and vegetables worth Rs. 270.084 crore was traded through these SKS in 2019-20. VFPCK registered 8 markets in the e-NAM portal through the wholesale markets.

VFPCK entered into a new venture by establishing a market network for fresh fruits and vegetables of Kerala in the brand name Thalir through supermarkets chains, online traders, ecoshop model outlets and milma outlets. The first VFPCK-MILMA collaborative kiosk for marketing fruits and vegetables was initiated at Edapally, Ernakulam. The State Horticulture Mission provided assistance at the rate of Rs. 25 lakh/unit under MIDH (Mission for Integrated Development of Horticulture) for establishment of 4 rural markets in 2019-20.

The markets functioning under Local Self Government Institutions also facilitated trade of agricultural produce. Separate market authorities are formed for each market and have prescribed procedures for trading as regards method of sale, handling, market charges, weighment, payment to seller, grading, and packing. The other institutions involved in agricultural marketing include KERAFED, MARKETFED, Kerala Agro Industries Corporation, Plantation Corporation of Kerala, Oil Palm India Limited, RUBBERMARK and the Commodity Boards namely, Spices board, Tea board, Coffee board and Coconut Development Board involved in marketing of specific agricultural commodities.

A comprehensive plan for the strengthening of existing agricultural markets and market related infrastructure and its linkage would facilitate holistic development of agriculture marketing system in the State. The market information and market intelligence system needs to be strengthened to keep abreast with the market developments at national and international level. Remunerative price for the farmer's produce is the single driving force that would sustain farming. The 'Base price' scheme for vegetables and fruits is a welcome

approach, which need to be dynamic as well. Public-Private investments in developing marketing infrastructure and cold chain facilities need to be initiated in the State and the auctions in the e-NAM pattern as well as online marketing of vegetables to consumers can be a revolutionary initiative which can be materialised easily at this time.

Post-Harvest Management and Value Addition

Improper post-harvest handling and lack of adequate processing facilities often led to considerable quantity of vegetables and fruits being wasted. Minimising post-harvest losses (transportation and marketing) and value addition of produce is one of the means to increase farmers' income. In order to address this issue, it is necessary to promote programmes by providing assistance for establishment of pack houses, cold storage facilities, development of cold chain, micro, small and medium value addition units and agribusiness ventures. A pack house of 740 square metres at Kammana in Wayanad District was established under the Vegetable and Fruit Promotion Council, Kerala in 2019-20.

Small Farmers Agribusiness Consortium (SFAC), in the State served to bring together the entrepreneurs and farm sector and promote agri-business projects thereby generating rural employment and enhancing farmers' income. SFAC Kerala also focuses on promoting agri-business entrepreneurs and Farmer Producer Organisations in Kerala.

In 2019-20, SFAC Kerala provided assistance to 11 new MSME (Micro Small Medium enterprises). Thirty value addition units promoted since 2017-18 are successfully functioning in addition to these 11 units.

As part of promotion of Farmer Producers Organisations in the State, the Kerala Farmer Producer Organisations (FPO) Policy, 2020 was approved as per G.O (Rt) No-431/2020/AGRI dated 15-05-2020 to establish forward and backward linkages for aggregation of inputs, produce, value chain development and better marketing opportunities resulting in higher returns to farmers.

Facilitating sufficient incubators, promoting technology protocol for ready to use packaging for micro level entrepreneurs, disseminating knowledge and experience in e-commerce and online marketing, quality standardisation of products, common infrastructure for cold storage and community processing centre can strengthen agribusiness ventures in the State. *(Source: Department of Agriculture Development and Farmers Welfare)*

Impact of Covid-19 Pandemic in Agriculture in the State

Kerala State Planning Board conducted an assessment of losses in the different sectors of the economy in order to understand the extent of damage caused by the pandemic and the consequent lockdown. The total losses in the crop husbandry sector in agriculture, including plantation crops from March to July 2020, are estimated at Rs. 1731.78 crore. This also includes the losses to the institutions concerned. Losses for agricultural labourers because of loss of wages is estimated at about Rs. 200.30 crore.

The Covid-19 pandemic has affected Kerala's agricultural sector in multiple ways.

1. Adverse impact on the export-oriented spices and plantation crops grown in Kerala, the prospects of which are influenced by international trade.

2. Domestic prices of most agricultural crops, livestock products, and fish fell sharply after the lockdown began. While the impact on production may not have been as severe as expected, the fall of demand and disruption of supply chains have resulted in major income losses for the farmers in the State.
3. Lack of availability of workers, especially migrant workers, has affected the functioning of several processing units in agriculture. The inability of these units to process agricultural products affected the supply chain and farmers.

Large revenue losses for agricultural institutions in the public sector

In rice, the second crop was almost ready to be harvested in the major paddy growing tracts when the lockdown began. It is estimated that there was a loss of about Rs.15 crore in the paddy sector, because of loss of grain and delayed transportation of grain.

The losses in vegetable sector were due to lower prices for the produce and inability to market the harvests as before. There were also losses because of reduced exports of vegetables from Kerala. The estimated loss in the vegetable sector from April 2020 to July 2020 is 221.93 crore. These losses were despite commendable efforts made by the Department, VFPCK, and Horticorp to intervene in the marketing of vegetables.

The total loss estimated for bananas and plantains up to July 2020 is about Rs. 269 crore and for pineapple Rs. 50 crore mainly due to fall in prices. The losses in cashew sector and tuber crop is estimated as Rs. 10 crore and Rs. 30 crore respectively.

Government interventions in vegetable markets

During the lockdown period, farmers' losses were reduced substantially because of the timely intervention of the Department of Agriculture Development and Farmers Welfare, Vegetable and Fruit Promotion Council Kerala and Horticorp. The Farmers Retail Outlets (FRO) set up locally (one each in every panchayat, two each in municipalities and five each in corporations) enabled farmers to sell their products locally to consumers. The online marketing strategy adopted by the Government agencies helped in the direct sale of products like mango, pineapple, banana, papaya and vegetables to the city dwellers. Moreover, inter- District movement of surplus produce was also organised.

Paddy threshers were arranged by the department (600 numbers) in Palakkad, Kuttanad, and Kole areas. This reduced the loss of paddy because of delayed harvesting and summer rain. From March 23, 2020 till April 15, 2020, Horticorp procured 1,200 MT of fruits and vegetables from farmers and outside the State. Online marketing of fruits and vegetables to the consumers was arranged through private online food delivery portals in Thiruvananthapuram, Kottayam, Ernakulam, Thrissur, and Kannur Districts. Supply of fruits and vegetables was also arranged to different community kitchens, residents' associations, guest worker camps and other agencies throughout the State. Marketing of fruits and vegetables to the consumers also took place through the 100 own-stalls and around 200 franchised outlets of Horticorp.

Enhanced outlay for Productive sector

From the beginning of the People's Plan, it was stipulated that a fixed percentage of Normal

share under General sector fund should be set apart for productive sector. However, in the beginning of 12th Five-Year Plan this was done away with. The experience in the first four years of the 12th Plan was reviewed by the present Government when it assumed office in May 2016 and a decision was taken to restore the mandatory minimum allocation with 20 per cent under productive sector, for the Annual Plan 2016-17. This was again revised in the beginning of the 13th Plan and the mandatory minimum ceiling in the productive sector was enhanced to 30 per cent in the case of GramaPanchayats, Block Panchayats and District Panchayats whereas in the case of Urban Local Governments it was fixed at 10 per cent. This facilitated or encouraged the Local Governments in allocating and taking up more projects in the productive sector who were until then concentrating on infrastructure sector. This signifies the emphasis given to enhance production as outlined in the Approach Paper to the 13th Plan. Details are given in Table 4.1.1.

Table 4.1.1: Share of Productive sector expenditure in the total expenditure under normal share of general sector funds of Local Governments (2015-16 to 2021-22), in Rs. crore

Year	Productive sector expenditure under normal share of General sector Funds	Total Expenditure in Normal share of general sector funds	Percentage share of productive sector expenditure in normal share under general sector expenditure (%)
2015-16	242.43	2,400.98	10.10
2016-17	373.42	2,040.85	18.30
2017-18	660.46	2,750.19	24.02
2018-19	674.26	3,330.11	20.25
2019-20	454.92	2,445.03	18.61
2020-21	789.9	3469.20	22.77
2021-22*	32.40	541.43	6.00

Source: Information Kerala Mission * upto September 2021

Broadening the Scope of subsidies

A notable change in the 13th Plan is that the subsidy norms have been comprehensively revised. Scope of subsidies that can be disbursed through Local Government Plans has been broadened by including more items. Further, subsidy rates have been increased and unified with the Department rates. Local Governments are permitted to take up those schemes which are not in the subsidy guidelines but existing in the Departments, in accordance with the Department guidelines. Besides, income ceiling of beneficiaries has been enhanced substantially. In the agricultural sector, benefits can be given to marginal and small farmers. For paddy cultivation benefits can be given to farmers who have more than five acres of land also. For animal husbandry, dairy and fisheries sectors the income limit has been raised to Rs. 5 lakh. Whereas, the income limit for housing, has been raised to Rs. 3 lakh. For other

schemes income ceiling has been enhanced to Rs. 2 lakh for general category and Rs. 3 lakh for SC category. In the case of Scheduled Tribes income limit has been waived.

In the light of Covid-19 pandemic, Government of Kerala formulated Subhikshakeralam scheme for increased production in primary sector including agriculture, animal husbandry, diary, and fisheries in 2020. The subsidy pattern again revised and increased as a part of it and also more items included in subsidy guidelines, especially in fisheries sector.

Subhiksha Keralam

Subhiksha Keralam is an ambitious scheme started by the State Government in 2020-21 to combat food scarcity against the backdrop of Covid 19 outbreak. It aims at large scale production of paddy, fruits, vegetables, tubers, grains, and to promote livelihood by providing assistance to raise cows, goats, rabbits, pigs, and fish as part of achieving self-reliance in food production within the next five years with the joint action of Local Governments, various departments and agencies like Kudumbashree, HarithaKeralam Mission; including public sector undertakings and NGOs. The convergence of various employment schemes such as Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Ayyankali Urban Employment Guarantee Scheme (AUEGS) are also ensured. Local Governments have been entrusted with the key role of formulating Plans and converging activities at the Local Government-level. The details of Subhiksha Keralam projects are shown in table 4.1.2

Table 4.1.2 Subhiksha Keralam - Local Body & Sector Wise Consolidated Details of Projects as on 31.08.2021, in Rs. lakh

Sl. No.	Type of Local Bodies	Total No. of Projects	Total Allotment	Total Expenditure	%
1	Grama Panchayaths	21439	121809.29	69443.12	57.01
2	Block Panchayaths	1532	23309.01	12604.96	54.08
3	District Panchayaths	711	22046.20	12518.03	56.78
4	Municipalities	1984	12758.55	6508.43	51.01
5	Corporations	469	7107.76	3918.84	55.13
	Total	26135	187030.81	104993.39	56.14

Source: Information Kerala Mission

Fallow land cultivation is one of the main components of the scheme, where in interested land owners, farmers, self-help groups, voluntary organisations, Kudumbashree units, youth organisations, expatriates and institutions in both public and private sector can participate. One of the noteworthy features of this scheme is introduction of base prices designed to protect farmers from adverse price fluctuations in the market. The base prices (a kg) that came into force in the State from 1st November 2020, are as follows: tapioca (Rs. 12), Nendran banana/Wayanadan Nendran (Rs. 30/Rs.24), pineapple (Rs.15), ash gourd (Rs. 9), cucumber (Rs. 8), bitter gourd (Rs. 30), snake gourd (Rs. 30), string beans

(Rs. 34), tomato (Rs. 8), ladies' finger (Rs. 20), cabbage (Rs. 11), carrot (Rs. 21), potato (Rs. 20), beans (Rs. 28), beet root (Rs. 21) and garlic (Rs. 139).The produce will be procured through the outlets of the Agriculture Department, VFPCK and Horticorp, and the Primary Agricultural Credit Cooperative Societies.

The Pathways to Growth

The future of Kerala's agriculture, as we underlined in the last section, has to be focussed on an increase in productivity, profitability and sustainability. Achieving this aim requires a major reconceptualisation of agriculture in the policy sphere. This would not require additional funding from the Government. At the same time, we do foresee the need for a significant convergence of activities of the different players in the following fields:

a) encouragement of cutting-edge research to develop high quality certified seeds
b) improvement of soil health
c) integrated water resources management to expand irrigation
d) effective public agricultural extension to popularise balanced fertilisation and IPM practices
e) adoption of mechanisation in agricultural operations
f) modernisation of supply chains and marketing systems
g) large-scale investments in processing and value- addition.

In our attempts to ensure convergence in these aims, Kerala should utilise two features of institutional strength in its history: decentralised governance and the cooperative movement.

Role of Local Self Governments and Decentralisation

Kerala initiated the People's Planning Campaign in 1996 after the passage of the 73rd and 74th amendments to the Constitution in 1994. A number of local activities and responsibilities related to agriculture were transferred to the local bodies. It was also specified that 40 per cent of the Plan expenditure of panchayat should be in the productive sector, within which agriculture constituted an important part (this was later revised to 30 per cent).

There were high expectations about the impact of decentralised planning on agricultural growth in the State. However, the introduction of decentralised planning coincided with a collapse of agricultural prices causing an unprecedented agrarian crisis in Kerala. Therefore, there can be no realistic assessment of the independent impact of decentralisation in agriculture at least over its first decade. The stagnation of agricultural growth, as we have seen in the last section, continued even after the acuteness of the agrarian crisis was contained after 2007.

The share of production sector expenditure in total expenditure has consistently remained below 30 per cent. In fact, in most years after 2012, the share was below 20 per cent, and even just 10 per cent in one year. The share of agricultural sector in total expenditure was between 5 and 10 per cent. This is a major drawback of the decentralisation experience in Kerala. Even if 10 per cent more of the expenditure by local bodies enters agriculture, the total spending in agriculture could be raised by about Rs.200 crore a year.

In sum, though decentralisation was introduced to empower local communities and local

institutions to plan the use of land-based assets, it by and large failed to achieve these objectives. This is not to devalue the role of panchayats in agricultural development, but a call to reform their activities and improve the content of their interventions in the sector. Decentralisation is too valuable a tool of public policy in Kerala to be squandered away.

A Plan for Integrated Action

The State Government has already initiated a programme for cultivating all fallow lands in the State. In the next stage, this policy needs to be more scientifically designed. Land is a scare and valuable commodity in Kerala and it has competing uses in agricultural and non-agricultural sectors. This underlines the need for a land use plan in every panchayat. Such a land use plan should aim at the most efficient and sustainable use of every plot of land in the panchayat. The areas suitable and reserved for agricultural use, industrial purposes, public services, tourism and the no-construction zones should be delineated. While reserving areas for agricultural uses, care should be taken to consider soil health and potential for reclamation as important criteria.

Alongside land use plans, Kerala also needs river basin plans for all its 44 rivers. The Dutch expert team that studied Kerala's water situation after the floods of 2018 had recommended that Kerala should transform its water policy in line with the concept of Integrated Water Resources Management (IWRM), as part of which Integrated River Basin Management (IRBM) should be considered (Government of Kerala, 2018). IWRM emphasises a cross-disciplinary coordination of water, land and related resources in a river basin, watershed or catchment to achieve long-term sustainability. The aim is to focus on achieving healthy river ecosystems with wide-ranging benefits for all communities, economies and biological processes within it. The key components of the IWRM policy are identified as follows:

a) Cross-sectoral coordination in policy development, planning, and implementation of water related infrastructure.
b) Soil conservation and erosion protection in upper catchments.
c) River channel management in view of uncoordinated construction of permanent and temporary check dams and bunds for irrigation and domestic water supply.
d) Continuous repair of canal embankments (bunds), silted-up and polluted drainage canals, weirs, barrages, and spillways.
e) Formulation of, and adherence to, optimal protocols for dam operations with balanced consideration for downstream water demand, environmental flow, flood protection, and power generation.
f) Better management of coastal river outlets.
g) Improved polder management in regions like Kuttanad.

It should be as sub-sets of these river basin plans that panchayats should attempt development of integrated watershed management interventions. Each panchayat needs to develop an appropriate watershed plan aligned to the larger river basin plan applicable to that panchayat. Such plans have to be prepared for every micro-watershed. In 2000, every micro-watershed in Kerala was mapped, and brief reports on each of them presented before

the gramasabhas, which elected the watershed committees. These watershed committees have become defunct since then. They have to be revived and strengthened with necessary expertise and information support to prepare micro-watershed plans. The watershed plans so drawn up should be approved by the District Planning Committee and also the Kerala State Planning Board, as in most cases river basins cut across district boundaries. The annual choice of projects in the local bodies should be justifiable based on these river basin plans and watershed plans.

Once the watershed plans are developed, each panchayat needs to prepare a crop plan based on detailed soil tests in each region. The Government already has a scheme to distribute soil health cards to each farmer. However, the progress under the scheme is tardy. The distribution of soil health cards to all farmers of the State must be completed within a specified timeframe. More soil testing centres should be established for this purpose. Every agricultural research centre in Kerala should have a soil-testing lab attached to it. Based on the results of these soil tests, and the prevailing agro-ecological conditions, suitable crops in each region have to be specified along with a plan for balanced fertilisation and sustainable plant protection. The KAU is already entrusted with the responsibility of developing package of practices for each of the 23 agro-ecological zones of the State. These documents can serve as a base document for the development of crop plans.

Agricultural marketing is an important sphere, where the State needs urgent emphasis. Procurement is available only for paddy. In other crops, such as coconut or fruits or vegetables, the absence of adequate marketing facilities deprives the farmer of a remunerative price. Here, a structural feature of the State's agricultural sector is the key constraint. As Kerala's farmers are predominantly small and marginal, there is (a) a fragmentation of marketed surplus, leading to absence of economies of scale in sale; and (b) high-levels of heterogeneity in the cropping pattern in these farms, leading to unviable quantities of marketed surplus in a number of crops. Due to these features of production, and the absence of efficient supply chains, the potential for aggregation of produce at the farmer-level remains acutely underexploited. There should be provision for promoting petty traders also by channelising the produce from petty producers to consumers through petty traders. This drawback has implications for not just the farmer's price but also the growth of enterprises in value-addition, where the availability of lump sum quantities of raw materials is an important cost factor.

Storage and warehousing in an important area that needs focussed attention. Kerala's agricultural production will rise in the next five years. Paddy, vegetables and fruits will be the focus areas. Development of storage and market yards (including cold storages and cold chains), scientific post-harvest management and handling systems and scientific transportation will have to receive urgent policy attention. The plan to develop a modern supply chain in agriculture should include a bottom-up development of mobile cold storages at the panchayat-level, larger storage structures at the block-level and even larger warehouses at the district-level. These structures should also be efficiently aligned and linked with the agro-parks and food parks being developed at various locations.

Promotion of value addition and processing should be a part of efforts to expand marketing and storage. One of Kerala's historic failures in the agricultural sector has been its inability to develop medium and large industries and enterprises that purchase farmer's products in some scale and transform them commercially into value added products. Such possibilities exist in crops like coconut, vegetables, fruits, spices and condiments and medicinal plants.

Chapter V
SUGGESTIONS FOR EFFECTIVE INTEGRATION WITH AGRICULTURE GROWTH AND DECENTRALISATION

Local Self Government Institutions being the backbone of the decentralised planning process in the state of Kerala, have enormous potential and possibilities for promoting Agriculture and allied activities in their jurisdiction. Since the people depend on their elected local representatives on many day to day requirements, the latter normally have better credibility and command which could be effectively channelized for involving the stakeholders in developmental and production activities. With this background and considering the prevailing ground level situation, the LSG institutions could take leadership in further coordination and implementation of the activities leading to agricultural growth and in turn income of the farmers and society as a whole. A few suggestions which could facilitate such growth and development are;

1. Planning is an anticipatory exercise. Every LSGI project should have a broad objective into which the specific schemes can be fitted. Instead of piece-meal plans, a five year agriculture development plans for LSGIs with well-defined outcomes may be developed. It should have a comprehensive outline for using the various resources- human and financial (state and central schemes etc.).LSGI plan is to be used for filling the critical gap in fund management.
2. Micro-level coordination of line departments (Agri, VFPCK, Animal Husbandry, Dairy, Fisheries, Minor irrigation etc.), co-operatives (Societies, Banks etc.), Kudumbasree, Farmers' groups, and FPOs at Panchayath level which could be expanded to block and district level by the respective LSGI to be initiated for planning and implementation of natural resources management, production processes, procurement, processing/value addition and marketing. This could be possible through facilitation of credit, inputs & services, and technologies by the agencies concerned. The role of cooperative institutions in these activities to be better realised and amalgamated. In order to ensure better integration of agriculture department and other agencies, all state and central schemes/ programs of line departments should become a part of LSGI plan.
3. As per Kerala Development Report, 2021 (KSPB), one of the reasons for the low productivity-levels in Kerala is unscientific and imbalanced farming practices. Kerala is one of the lowest fertilizer-consuming States in India and imbalanced nutrient management is also evident from the sale of major fertilizers. Campaigns on different farming streams/practices which have no scientific empirical back up are also prevalent in the state (Natural farming, Zero budget farming etc.). To overcome these constraints, effective utilization of scientific technologies in all stages of the value chain is to be ensured with the support of resource persons/scientific organizations by the above platform coordinated by the LSGIs.
4. Availability of quality inputs and services is a grey area in the sector especially in rural areas. Ensuring the availability of quality inputs and services (including machineries

and labour) for farming activities should be a major focus of this platform. LSGI should formulate plan projects which would effectively include the PACS and the agencies of the agricultural department to manage the agri- input production/ supply outlets and custom hiring centres and the labour forces (Karmasena).

5. Projects aiming at promotion of integrated farming systems (IFS) by effectively merging of different schemes of the line departments and LSGs are the need of the hour. Agriculture in Kerala being predominantly homestead based, demand varied design and plan with focus on inter-cropping and mixed farming, instead of the present plan schemes of the Government which are crop-centred. Even though livestock (dairy, poultry, goats, ducks etc.) and fisheries are integral parts of the homestead system of farming, these components are the domain of different departments, which presents challenges in the convergence of activities at the ground-level. Similarly mushroom production, apiculture etc. and residue recycling activities like biogas plants are also to be integrated with the IFS so as to achieve effective resource utilization and climate resilience. This issue has to be addressed by a platform led by the LSGIs, formulating coordination mechanism at the appropriate level. All organic waste should be scientifically processed and given back to soil to enhance carbon content. All efforts initiated and run through LSG,s should be supported by concerned line depts.
6. Establishment of full-fledged marketing centres in major locations in rural and urban areas to be thought of by avoiding multiplication of small shops/markets everywhere which cannot survive by themselves. LSGIs should coordinate markets ensuring effective linkage with the cooperative societies/banks and in collaboration with marketing agencies. Along with this should be provision for promoting petty traders also.
7. LSGIs may formulate norms for issuing privilege cards to food/agricultural producers for social recognition and getting priority in other services of the LSGIs and Govt. schemes, thus boosting the morale of farmers. The criteria for this purpose may be fixed based on the quantity/value of the produce supplied to the mainstream society through different agencies.
8. Each LSGI is a unique entity with respect to the production sector and hence the nature and magnitude of investment will be varying. Comprehensive exercises at each LSGI levels may have to be designed, devised and implemented taking into consideration the agro ecological and crop suitability.
9. Review of nature and magnitude of investment on quantitative basis requires that state level data of 1200 plus LSGIs -to be consolidated for the last five years. The data can be obtained from Sulekha software. Being an exhaustive exercise, this may be piloted in one or two districts.
10. The growth of agriculture in 14th Five year plan can be taken up only after the plan period. Hence, building up the estimates on the current production and productivity level is to be carried out, to serve as the base.
11. To ensure better participation of LSGIs in agriculture, planning process at grass root level need to be revisited. Before convening the GramaSabhas, stakeholder discussion with farmer organization, crop based collectives (E.g.Padashekara Samithi, Kerasamrakshana Samithi. Karsheeka Karmasena) may be done.

12. Suggestions from the ward level meetings of Kudumbasree activity groups/ JLG engaged in productive sector to be invited before GramaSabha.
13. The existing land use pattern and cropping pattern in the different Panchayaths on the basis of the recent agro ecological units may be documented.
14. Digitisation and GIS mapping of the land use and cropping pattern and demarcating the land into different zones based on the current crops/ land use, industrial areas, common area for multipurpose use, residential area etc. may be the priority of LSGs. Further investments/ changes to land may be strictly carried out on the basis of this spatial planning at appropriate level. Deviations/ conversions of the delineated areas may not be permitted under any circumstances.
15. Crop selection and production plan suitable for the agro ecological units may be popularised for enhancing agricultural production.
16. Watershed planning and AEU wise production plans to be ingrained into the LSGI plans.
17. MGNREGS/AUGES work plans also should be an integral part in the Panchayath / Municipality plan.
18. Administrative control other than transfer and major punishment as per Classification, Control and Appeal Rules shall be vested with the local bodies.
19. Adhocism in plan formulation and frequent dispensation to be done away with.
20. Flexi-plan funds may be year marked for meeting emergency/contingent responses like disaster/ pandemic and pestilence. At any circumstance, the priority sector plan funds devolution may not be limited.
21. LSGIs can follow a five year based planning for the development activities and implementation based on annual action plans.
22. The District Development Reports available with District Panchayaths can be revisited and reinvented. The respective vikasana reports at other levels of LSGIs may also be assessed, in terms of fulfilment and project/ scheme formulation over last years. So also, the Watershed master plans available with the LSGIs. The documents available t the LSGI should form the basis of future plans, in terms of their accomplishment, identifying the deficiencies and filling the gaps.
23. Vertical programs of state and central government to be made part of LSGIs.
24. Planning is an anticipatory exercise. Every LSGI project should have a broad objective into which the specific schemes can be fitted. Instead of piece-meal plans, a five year agriculture development plans for LSGIs with well-defined outcomes may be developed. It should have a comprehensive outline for using the various resources- human and financial (state and central schemes etc.).LSGI plan is to be used for filling the critical gap in fund management.
25. Special interventions to dispense off the parallel schemes implementation by line departments.
26. Strengthening agriculture knowledge centres of KAU to cater to the knowledge /technical needs of the farmers and agri-prenuers.

27. Capacity development and awareness programmes for LSGD representatives on Climate –smart agriculture.
28. Inter disciplinary Centre of excellence on Decentralisation in agricultural development at KAU.
29. Include other R&D institutions like engineering colleges, poly techniques etc. in the research for technology development. It may also include the laboratories of Higher Secondary Schools for testing water and soil. VHSC students could be a part of this programme. Efforts to be taken to include this in the school curriculum.
30. LSGIs can take the lead to rope in youth through start-ups and agri-business initiative in value addition and marketing
31. Co-operatives for strengthening the supply chain in local agriculture, including storage and logistics at district/ block level.
32. Data base management in the Krishibhavan level to be strengthened and streamlined. The basic data register of the Krishibhavans has to be updated in a war foot manner and data has to be made transparent, shared with LSGI. As done in the case of Animal husbandry department, (the livestock census is being carried out every three year), agricultural census has to be done every five year at least. Reliable data base is urgent and mandatory.
33. A dedicated wing at the Directorate of Agriculture with state of the art technology for data collection and digitisation.
34. Alternately, LSGs can follow an Ecosystem based approach of developmental initiatives in production sector addressing the different ecosystems rather than implementing crop based programmes to be highlighted.

1. Wetland ecosystem- strategy should focus on crop rotation principles with food grains, pulses, oilseeds and vegetables to improve soil ecosystem and resource use of wet land in a sustainable manner improving land productivity.
2. Homestead ecosystem- a comprehensive developmental programmes for homesteads assuring daily, weekly, monthly, seasonal and annual income with combinations of different components/ifs models.
3. Commercial ecosystem- where we forgot to help these entrepreneurs who really feed us by doing agri business...a mechanism to guide them properly to have products with zero tolerance to chemical pesticides to be achieved and possibilities of secondary activities yet to be explored in those commercial ecosystem.
4. Plantation ecosystem- pepper, coffee, cardamom etc. with premium brand management of all above systems in different agro ecological units yet to be explored.

POSSIBILITIES OF CONVERGENCE AND INNOVATIVE REFORMS

1. The thrust should be to increase productivity of crops in Agro Ecological Zones (AEZs) and Agro Ecological Management Units (AEMUs). Based on this, Agricultural Basic data should be updated and individual Farm Plans prepared at Grama Panchayath level. Consolidation of these Farm Plans should be done Block Panchayath level and a Production Plan and Procurement and Marketing Plan prepared at this level. Based on this a land use plan should be arrived.

2. The entire training activities on new production, processing and value addition technologies should be carried out at Block Panchayath level and for that the infrastructure facilities of Block Level Agricultural Knowledge centres (BLAKCs) should be enhanced and strengthened. Also need a farmer education programme (FEP) targeting small farmers.
3. Convergence of activities of Agriculture and allied departments, State and Central Schemes, MGNREGS activities, Kudumbasree, etc. should be done at Grama panchayath level and duplication of projects and schemes should be avoided.
4. Quality inputs should be provided to farmers and availability of seeds, seedlings, etc. should be fully met from department farms and Block level nurseries. Nursery registration and certification has to be strengthened by the Grama panchayats.
5. Pharmacy of agricultural chemicals and other inputs along with Krishibhavans on the lines of Primary Health Centre, Ayurveda dispensary, Veterinary dispensary, etc. so that these can be given to farmers with technical advice to solve their field problems.
6. Seed village programmes under the aegis of panchayats- Seed multiplication plots of new and promising varieties of crops should be started in Grama panchayatlevel/ Block level under the technical supervision of krishibhavans.
7. LSG institutions can formulate and implement vegetable production bonus on the lines of paddy production bonus.
8. Paddy land area based on the Data Bank prepared should be conserved and should not be allowed to conversion and non-agricultural uses. Revenue department should take timely and speedy action in case of any illegal conversion.
9. There should be an assured procurement system for the agricultural produce by giving a remunerative price to producers and it should be professionally managed based on IT based marketing and supply chain activities.
10. Duplication and enormous committees for various schemes should be avoided and the Agricultural Development Committees (ADCs) should be strengthened to given power to approval and implantation of schemes.
11. There should start Value addition parks in all District Agricultural Farms. Agri business should be taken as a major component throughout.
12. Soil testing labs in all districts should be strengthened to give Soil Health Cards to all farmers.
13. The system of giving assistance based on vouchers should be done away with and necessary quality inputs should be arranged and supplied.
14. There should happen a thorough review of project implementation at all levels of the department and dual control of officers should be avoided.
15. Auditing system should be revamped and importance should be given to social audit.
16. There is need for a common facility centre at block level for processing and value addition enterprises. Similarly we have to think about community supported agriculture (CSA) known from developed countries. Here in our state also some farmer groups are doing CSA.
17. Plan assistance may be provided to farmers and promising entrepreneurs to visit Agri Incubation Centres.

18. Interest free loans may be provided to lease land farmers and provision may be given to meet the interest portion from plan fund.
19. The need for agriculture census or data collections in line with the animal husbandry sector is very much for effective planning and implementation.
20. The Central Govt. is implementing various programmes for storage, marketing and valued addition of agriculture produce .If local governments care given the permission to allocate funds from such schemes and implement them in co-ordination with farmer groups or individual farmers it will help in building the basic infrastructure in these areas.
21. The lack of basic infrastructure is the most important hindrance for bringing in fallow land under cultivation. A separate fund similar to the lines of RIDF may be developed in the state in collaboration with the LG for basic infrastructure development in agriculture.
22. The LG may be asked to earmark a specific amount for basic infrastructure, storage and marketing chains, value addition centres etc. It is very important to strengthen the statutory support system to LSGIs.
23. Various agencies are giving training in agriculture entrepreneurship as well as value addition. Local governments may be asked to take up projects for giving training in entrepreneurship.
24. Fallow land under every krishibhavan as well as public as well as private players is to be identified and brought under cultivation by converging it with schemes like MGNREGS. This will result in increase in income as well as employment generation.
25. Agriculture facilitation centre: People interested in taking up agriculture activities may be identified and given training as well as related assistance to make them future entrepreneurs .Also they may be encouraged to take up value addition activities as well as converged with on-going agricultural programmes.
26. Farm tourism: Kerala has multiple options for farm tourism but unfortunately this is not in accordance with the guidelines. Local governments may be asked to take up projects in farm tourism in collaboration with mission for Responsible Tourism.
27. E-commerce is fastly developing. For agri market opportunity this should be tapped. Online jilla mart/block mart may be our future market. Assistance from KSIDC and Innovation Council, etc. may be explored.

Though the Kerala Paddy and Wetland Act is under way it does not prevent the farm owners in leaving the land fallow. The practice of leaving cultivable land fallow for long periods should be strictly banned. Also the royalty given to paddy growers if given through local government projects may prove to be more fruitful.

Agriculture engineering wing at the block level is needed for initiating mechanised agriculture to give support to karshika karma sena as well as agro service centres. Encouragement to Drip irrigation, krithyathakrishi, samrakshithakrishi, etc. as well as development of basic infrastructure in agriculture should be the focal points of such centres. Local governments should focus in developing such centres to encourage investments in agriculture.

Since the agricultural departments as well as the local governments are now exclusively focussing on production activities, forward linkage activities like storage and marketing, value addition etc. is not getting enough focus. A professional wing is to be set up for setting up primary storage centres, cleaning, grading, transport , packing , online marketing to transport the value added products to the centres , export etc.

The technical know- how as well as the expertise of the agriculture officer has to be fruitfully utilised in giving inputs as well as facilitating agricultural operations. At present the officer is more engrossed in the day today office dealings. The present audit system is a hindrance for implementing many innovative programmes. Technically qualified persons with agriculture background may be included in the audit team.

Delay in compiling the beneficiary list has adversely affected the timely implementation of the projects. Also, the beneficiaries are often not people engaged in agriculture. A mechanism is to be developed to bring all the people engaged in agriculture in a single platform under each krishibavan to save the practice of preparing the beneficiary list time and again. The details of the persons willing to do agriculture labour are to be compiled and their services are to be provided through a mobile app.

The cooperative societies are capable of taking up activities related to storage and marketing, cold storage, export facilitation centres, value addition centres etc. However at present the local governments are unable to utilise the resources of co-operatives in project implementation.

Every local government should have a farm plan consisting of various projects in the long term as well as short term. A comprehensive plan for agriculture should be prepared consisting of components in agriculture, soil, irrigation, animal husbandry, fisheries and other allied activities as well as farm tourism and master plan for wetlands. Also the activities that can be taken up at various tiers of LG as well as department levels should be clearly demarcated and implemented timely in mission mode.

Action plan for agriculture as well MGNREGS should be prepared together and convergence should be ensured. Monitoring of not only the department schemes but also the agriculture projects taken up by the local governments should also be done. Calendar should be devised such that every year by January, all the agriculture programmes are designed and convergence ensured such that by April implementation can start.

Each krishibhavan should be converted into centres providing quality seeds and planting material, bio fertilizers organic manure , organic potting etc Just like hospitals are having veterinary facilities these days pharmacies should be set up adjacent to the krishibhavans. Crop clinics should also be set up to diagnose and give advice and suggestions. Even though LG these days are taking up well recharging projects, the lack of proficient people in the field is adversely affecting the effective implementation of the projects. If a group of people are given training in these activities and army is formed, all the wells of an LG can be recharged at the same time give employment to youth also.

Production of planting materials- Quality planting materials can be produced under the supervision of agriculture officers in a decentralised manner and distributed through various programmes. In this way quality planting materials as well as seeds as well as seedlings can be made available at the krishibavan level itself. Agriculture services, crop planning, marketing etc. may, be brought under IT system and the possibility of online marketing may be explored.

Farmer self-help groups in the form Kudumbasree may be formed and linked to cooperative societies for providing loans other financial assistance. Hybrid seeds -Current guidelines stipulates obtaining seeds form Agriculture department, Farms, National Seed Corporation, Kerala State Seed Development Authority, VFPCK. However, hybrid seeds are mostly available in the private sector, the possibility of which may be explored.

Watershed master plan-Watershed based planning is often limited to the development of the watershed pan with little focus on the implementation. Plan formulation and implementation should focus on implementing this plan in a phased manner. Many farmer producer companies have come up across the state but currently are not included in the LG Plans as per the guidelines. This has to be solved.

While we resort to decentralised planning, the Agricultural department still follows the 'Top to bottom' approach in designing the department / state sector schemes. The schemes are still target oriented, being thrust upon the officers, without considering the geographical or location specific and suitability. At the implementation stage, the officers are left with target achievement, rather than performance or outcome oriented.

Hence, it is suggested that the planning for agricultural production and schemes has to be done at the grass roots and the schemes required / suitable for each local body or location (now onwards it can be AEU based planning) alone be allotted to the Krishibhavans. The department schemes allotted may be complementing the 5 year perspective plan for agriculture formulated at the panchayats.

Panchayat/ Block level coordination committee for the better implementation of agricultural projects – As one of the critical department , the Minor irrigation, has not been brought under the LSGD, and irrigation being an integral factor for crop production, a statutory coordination committee comprising of all line departments and the associated departments with the local body President as Chairperson may be instituted.

RECOMMENDATIONS FOR GOVERNMENT LEVEL POLICY MAKING

1. Sulekha software needs an upgradation. Now, it is difficult to incorporate the new ideas and projects in agriculture sector with existing micro sector codes in Sulekha. Also, a facility to know the position of an ongoing project like beneficiary list handed over, beneficiary selection completed, project started and so on.
2. Improvement in production and productivity may ensure with various policy decisions.
3. The marketing support system including marketing, supply chains, value additions is now available only for paddy. It should be extended to other crops and vegetables also.

4. Coverage for Plantation sector may also include in plan guideline.
5. Plan guidelines should give freedom to LSGIs to extend the support to Farmer Producing Companies (FPOs) and similar initiatives. Clarity is needed in these kind of supporting mechanism.
6. The four base pillars in production sector are 1) Inputs and Services, 2) Credit (includes cooperative credits), 3) Technology support, and 4) Marketing and Supply Chain.
7. Agriculture department is spending crores of rupees in agricultural sector through various departmental schemes. But the integration of such programmes with LSGI projects never happened. So it is highly recommended that the duplication of projects should be avoided. The funds for such similar projects may be routed through LSGI plans. That will be helpful to ensure integration.
8. There is no integration with LSGIs and Irrigation department. It should be ensured. These two departments are moving parallel.
9. A Local Body level survey and database is strongly recommended to build a data on small ponds, canals and channels in each local body area. There is no such database till date.
10. Inland fisheries programmes also may be routed to LSGI plan for better integration and transparency.
11. It is strongly recommended that a framework may be created for better integration with LSGIs and Padasekhara Samithis.
12. Marketing of Agriculture products should be strengthened without any additional burden to Govt. by strengthening of VFPCK, Horticorp, Marketing wing of Agriculture department etc.
13. Land category change may be allowed only after strict verification. Otherwise, there will be large loss of agricultural land.
14. It is recommended that there should be a local level master plan for land usage and regional level land use policy.
15. IN MNREGS, a state guideline may be formed based on central guideline which will be helpful to ensure agriculture labour.
16. Effective integration of LSGIs and NABARD may be ensured.
17. Inclusion of representatives of co-operatives in the Working groups and GramaSabha, may support decision making regarding investments for infrastructure/buildings.
18. Special projects of LSGIs for encouraging agri-based start-ups- to clear the fund gaps.
19. Strict enforcement of laws regarding land conversion, land tenure, land ceiling etc.
20. Lease land farming guidelines have to be legalized.
21. The productive sector outlay stipulated as per Plan guidelines as not less 20 per cent of the Plan allocation of LSGIs. Scope for integration of infrastructure development/ investment funds of NABARD, Kerala Bank may be looked into.
22. If needed, the LSGIs need to be empowered with more delegations/authority to address these issues and lead the coordination at their jurisdictions for growth in the

agricultural sector. Utilizing the services of/assigning a technically competent and experienced officer with authority for this coordination, in liaison with the LSGI also would be ideal.

23. Procurement and redistribution of agricultural and food produces in 'MILMA' model is to be attempted, refined and streamlined at different levels. Strengthening of agencies involved in large scale procurement of fruits and vegetables like VFPCK, instead of duplicating similar efforts in the same region by other agencies, to be considered. Distribution is to be planned in the nearby Panchayaths, blocks and district considering production seasons and availability of produce in the market by constant interactions of the concerned agencies. Processing and value addition facilities to be arranged in the procurement/marketing centres to overcome the glut situations. These activities could be coordinated by the platform led by LSGIs at Panchayath, and block levels with the corresponding officials. District level coordination could be by the Asst. Director (Marketing) and District Manager, VFPCK in the leadership of District Panchayath.
24. Strengthen the statutory support system to LSGIs. It is very important. Also, a framework is needed to strengthen District Planning Committees, which includes role clarity of DPCs and its powers.
25. Planning process is multi-level, which includes LSGIs and departments. So role clarity must be ensured in each tier. Department responsibilities, LSGI responsibilities both should be clearly stated.
26. Find out strategies for effective scheme integration.
27. MNRGERS and AUGES have enough programmes and schemes for agricultural sector. But the utilization of such schemes is not up to the mark. A clear integrated plan of action may be formulated for this purpose. It will be very helpful to ensure the convergence.
28. Find out possibilities of community based insurance programmes for agricultural sector. It is very important in the current scenario of climate changes and disasters.
29. Need a plan for effective integration of Navakeralam Mission with agricultural development. Schemes like employment for 5 persons in each 1000 population, one local government one idea, one district one idea may be effectively integrated. District Planning Committees should take a lead role in these kinds of convergence programmes. Assistance from KDISC and Innovation Council etc. may also check.

CONCLUSION

The 14th Plan period should be an appropriate occasion to reinvent the role of LSGIs in agriculture. The Grama Panchayats should play a leading role in planning for agriculture at the local-level, even as the Block and District Panchayats are given larger responsibilities to ensure that regional policies in agriculture are aligned to the needs of specific agro-ecological zones. If an integrated effort with a constant aim, harvesting the power of decentralisation in agricultural growth is not a big task. If the recommendations and suggestions are realised, it would be a rebirth of our agricultural sector.

APPENDIX

Annex 1 - Working Group on Harvesting the Power of Decentralisation in Agricultural Growth

Sl No	Name & Address	Designation	Remarks
		Co-Chairpersons	
1	Smt.Sarada Muraleedharan IAS	Additional Chief Secretary, LSGD Ph: 9650777851	Official
2	Mr.Omalloor Sankaran	President, District Panchayat, Pathanamthitta (Co-Chair)	Expert
1	Dr. Joy Elamon	Director General, KILA	Expert
2	Mr. P. K. Raveendran	Director of Research, IRTC	Expert
3	Dr. K. Rajesh	Senior Urban Fellow, KILA, KSSP	Expert
4	Ms. K. M. Usha	(KGPA), President, VandiperiyarGramaPanchayat	People's Representative
5	Mr Manikandan Pottassery	Former President, KanjirappuzhaGramapanchayath Ph:9446941831	Expert
6	Mr. G. Sajan	Retd Head (Programmes), Doordarshan Kendra	Expert
7	Dr. A. Prema	Professor and Head, Dept of Agricultural Economics, KAU Ph:9446319848	Expert
8	Sri.V.G.Gopinath	Former Registrar, IRTC and Chairman, Susthira Farmer Producer Company, Palakkad Ph:9446994927	Expert

9	Dr.Muraleedharan.P	Programme Coordinator, KVK Alappuzha Ph:9496167382	Expert
10	Sri.Hiroshkumar.K.S	Technical Officer, Cropping System Research Centre, Karamana Ph:9895994391	Expert
11	Sri.Prakash Puthenmadathil	Assisstant Director, Agriculture, Vengara Block, Malappuram Ph:9446055735	Official
12	Sri.Prakash.P	District Coordinator, Harithakeralam Mission, Kozhikkode Ph:9447768058	Official
		Convener and Co Convener	
13	Smt. Josephine J	Chief, Decentralised Planning Division	Official
14	Dr.Sreekumar.T.L	Assistant Director, Decentralised Planning Division	Official

Annex 2 - Terms of Reference

1. To critically assess the role and performance of LSGIs in promoting productive sector investments and agricultural growth - quantitative and qualitative - over the past five years.
2. To suggest reform measures to be undertaken to rejuvenate the participation of LSGIs in promoting public expenditure and agricultural growth.
3. To suggest legal or administrative changes to be initiated, if any, to deepen the participation of LSGIs in agricultural development.
4. To prepare an implementable roadmap to converge the objectives and foci of the state plan schemes and schemes prepared by the LSGIs towards agricultural development.
5. To suggest measures to improve the design, formulation, and implementation of schemes towards agricultural development at the LSGI-level.